

# **INDEPENDENT ORBITER ASSESSMENT**

## **ASSESSMENT OF THE DISPLAYS AND CONTROLS SUBSYSTEM**

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MCDONNELL DOUGLAS ASTRONAUTICS COMPANY  
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SPACE TRANSPORTATION SYSTEM ENGINEERING AND OPERATIONS SUPPORT

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INDEPENDENT ORBITER ASSESSMENT  
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Independent Orbiter Assessment  
Analysis of the Display and Control Subsystem

**1.0 EXECUTIVE SUMMARY**

The McDonnell Douglas Astronautics Company (MDAC) was selected in June 1986 to perform an Independent Orbiter Assessment (IOA) of the Failure Modes and Effects Analysis (FMEA) and Critical Items List (CIL). Direction was given by the STS Orbiter and GFE Projects Office to perform the hardware analysis using the instructions and ground rules defined in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986.

The IOA effort first completed an analysis of the Displays and Control hardware, generating draft failure modes and potential critical items. To preserve independence, this analysis was accomplished without reliance upon the results contained within the NASA FMEA/CIL documentation. The IOA results were then compared to the NASA FMEA/CIL baseline with proposed Post 51-L updates included. A resolution of each discrepancy is provided through additional analysis as required. This report documents the results of that comparison for the Orbiter D&C hardware.

The IOA product for D&C analysis consisted of one-hundred thirty-four failure mode "worksheets" that resulted in eight (8) potential critical items being identified. Comparison was made to the NASA baseline of 4 January 1988 which consisted of two-hundred sixty-four (264) FMEAs and twenty one CIL items. The comparison determined if there were any results which had been found by the IOA but were not in the NASA baseline. This comparison produced agreement on all but forty-five (45) FMEAs which caused no differences in the CIL items. Reference Figure 1.

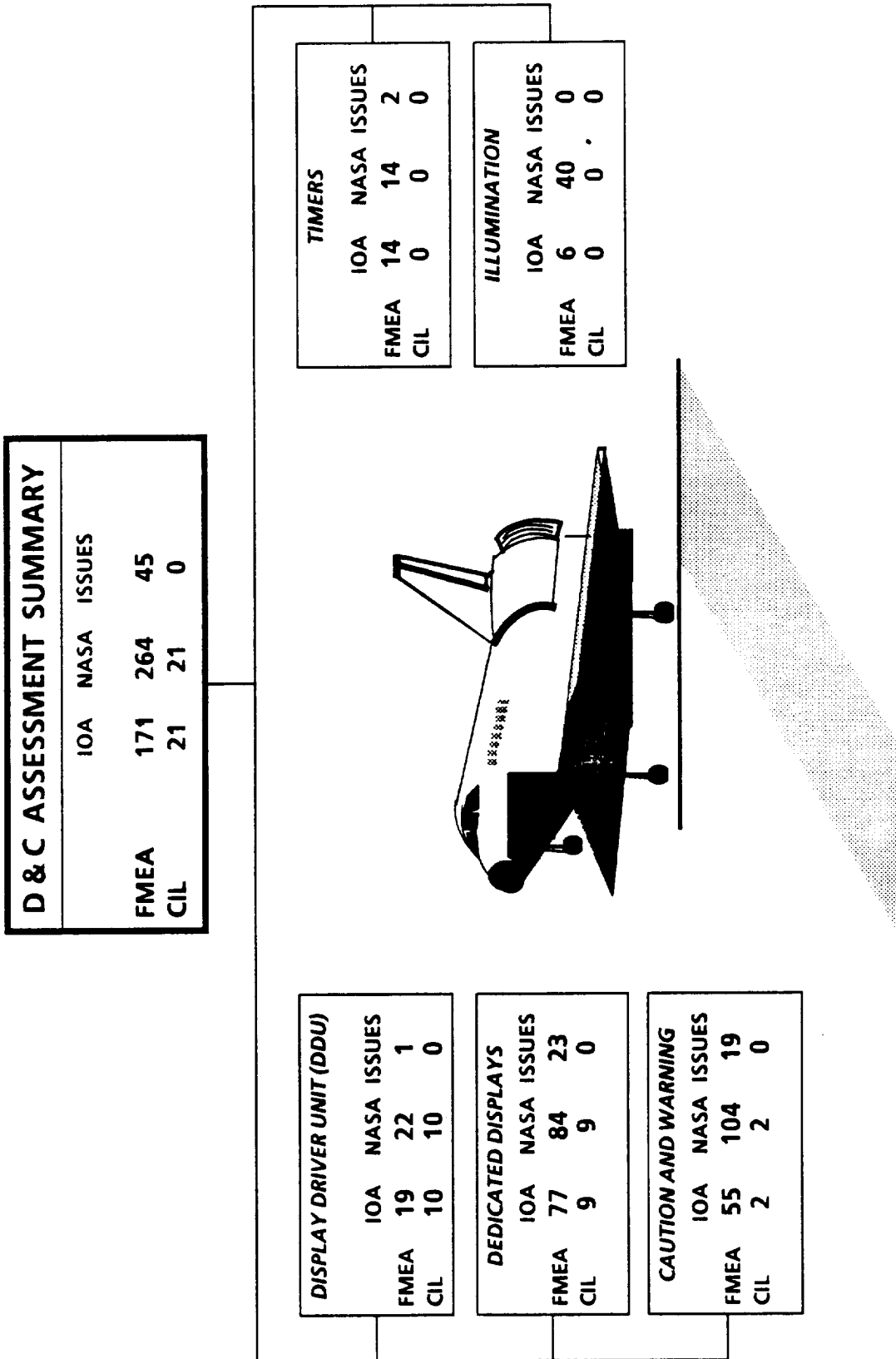
The issues arose due to different interpretation of NSTS 22206, FMEA and CIL preparation instruction. IOA analyzed the electrical circuit as a black box, and NASA analyzed the components of the black boxes. Of the forty-five (45) differences with the FMEA's, all were minor and did not affect criticalities assessment. In conclusion, IOA is in full agreement with the revised NASA CIL baseline.

Summary of IOA Failure Modes By Criticality (HW/F)							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	0	16	0	58	5	92	171

For each failure mode identified, the criticality and redundancy screens were examined to identify critical items. A summary of Potential Critical Items (PCIs) is presented as follows:

Summary of IOA Potential Critical Items (HW/F)						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	0	16	0	5	0	21

# D & C ASSESSMENT OVERVIEW



## **2.0 INTRODUCTION**

### **2.1 Purpose**

The 51-L Challenger accident prompted the NASA to readdress safety policies, concepts, and rationale being used in the National Space Transportation System (NSTS). The NSTS Office has undertaken the task of re-evaluating the FMEA/CIL for the Space Shuttle design. The MDAC is providing an independent assessment of the Orbiter FMEA/CIL re-evaluation results for completeness and technical accuracy.

### **2.2 Scope**

The scope of the independent FMEA/CIL assessment activity encompasses those Shuttle Orbiter subsystems and GFE hardware identified in the Space Shuttle Independent FMEA/CIL Assessment Contractor Statement of Work. Each subsystem analysis addresses hardware, functions, internal and external interfaces, and operational requirements for all mission phases.

### **2.3 Analysis Approach**

The independent analysis approach is a top-down analysis utilizing as-built drawings to breakdown the respective subsystem into components and low-level hardware items. Each hardware item is evaluated for failure mode, effects, and criticality. These data are documented in the respective subsystem analysis report, and are used to assess the NASA and Prime Contractor FMEA/CIL re-evaluation results. The IOA analysis approach is summarized in the following Steps 1.0 through 3.0. Step 4.0 summarizes the assessment of the NASA and Prime Contractor FMEAs/CILs that is performed and documented at a later date.

#### **Step 1.0 Subsystem Familiarization**

- 1.1 Define subsystem functions**
- 1.2 Define subsystem components**
- 1.3 Define subsystem specific ground rules and assumptions**

#### **Step 2.0 Define subsystem analysis diagram**

- 2.1 Define subsystem**
- 2.2 Define major assemblies**
- 2.3 Develop detailed subsystem representations**

#### **Step 3.0 Failure events definition**

- 3.1 Construct matrix of failure modes**
- 3.2 Document IOA analysis results**

Step 4.0 Compare IOA analysis data to NASA FMEA/CIL

- 4.1 Resolve differences
- 4.2 Review in-house
- 4.3 Document assessment issues
- 4.4 Forward findings to Project Manager

## **2.4 D&C Ground Rules and Assumptions**

The D&C ground rules and assumptions used in the IOA are defined in Appendix B.

### 3.0 SUBSYSTEM DESCRIPTION

#### 3.1 Design and Function

The function of the D&C hardware is to provide the crew with the monitor, command, and control capabilities required for management of all normal and contingency mission and flight operations.

Figure 2 is an overview of the D&C hardware for which failure modes analysis was performed. For the analysis, the hardware was divided into the following five categories:

- I. FLIGHT DISPLAYS AND ANNUNCIATORS - These categories includes the displays that allows manual control of the vehicle, provide monitoring of automatic control performance, and provide display of critical flight parameters. The components of this category are:

(1) G-METER	(6) PQI
(2) AMI	(7) SPI
(3) AVVI	(8) HSI
(4) ADI	(9) FLT CNTL PWR
(5) HUD	

Figures 3 - 10 provide a hardware breakdown of each of the above components.

- II. CAUTION AND WARNING - This category consists of those components that inform the crew of out-of-limit conditions of the vehicle. This category consist of the following:

(1) ANNUNCIATOR (CWA)	(3) ELECTRONIC UNIT (CWE)
(2) LIMIT MODULE (CWLm)	

Figure 11 provides a hardware breakdown of each of the above components.

- III. DISPLAY DRIVER UNIT - This category consists of the electronic unit that provides the interface between the GPC and the primary flight displays. The function of this unit is to 1) decode data signals from the GPC and convert these signals to display driver commands, 2) provide ac and dc operating power to the ADI, and 3) set flag on the dedicated displays. The hardware in this category is the DDU.

Figure 12 is a hardware breakdown of this component.

- IV. TIMING DISPLAYS - This category provide the crew with time referenced to GMT or GET and consist of the following components:
- (1) MISSION TIMER
  - (2) EVENT TIMER

Figures 13 - 14 provides a hardware breakdown of these components.

- V. LIGHTING - This category consist of the components that allows illumination of displays and controls, payload bay operations, EVA's, RMS operations, and docking operations. The components of this category are:
- (1) INTERIOR LIGHTING
  - (2) EXTERIOR LIGHTING

Figures 15 - 16 provides a hardware breakdown of these components.

A brief description of the flight displays and annunciators, caution and warning, display driver unit, timing displays, and lighting is provided below.

1. One self contained G-METER located on panel F7. It senses linear acceleration along the Z-body axis of the vehicle.
2. Two AMI's one at the CDRs station and one at the PLTs station. These provide angle of attack, mach/velocity, equivalent airspeed, and acceleration information to the crew.
3. Two AVVIs, located on panels F6 and F8. They provide altitude acceleration, altitude rate, barometric altitude, and radar altitude information to the crew.
4. Three ADI located on panel F6, F8, and A6. These provide simultaneous display of attitude, attitude angular rate, and attitude error information to the crew.
5. Two HUDs located at the CDR and PLT stations. These provide the crew with information required for landing.
6. Two Propellant Quantity Indicators located on panel F6 and F8 to provide the crew with the amount of propellant remaining.
7. Two SPIs located at CDR and PLT stations. The Surface Position Indicators allows the crew to view the status of the aerosurfaces of the vehicle.
8. Caution and Warning - The function of this system is to inform the crew of out-of-limit conditions of predetermined parameters of the vehicle.
9. Annunciator Control Assembly - This system provides visual indication of Orbiter status (emergency/warning - RED, caution - YELLOW, and advisory - WHITE).
10. Display Driver Unit - The function of this unit is to provide the interface between the GPC and the primary flight displays.

11. Timing displays provide the crew with time referenced to Greenwich Mean Time, liftoff, or to a particular event.
12. Lighting - The function of this system is to provide illumination of the controllers, numeric displays, interior, and exterior of the vehicle.

### **3.2 Interfaces and Locations**

The D&C hardware is located through the Orbiter. The precise location for each component/switch/circuit is provided on the analysis worksheets in Working Paper No. 1.0-WP-VA87001-06.

The D&C hardware is interfaced with the software via the flight critical MDMs. Switch and power status is monitored via the flight critical MDMs and operational instrumentation.

### **3.3 Hierarchy**

Figure 2 illustrates the breakdown of the D&C into its hardware components, and Figures 3 - 16 are the detailed systems representations.



## D&C SUBSYSTEM OVERVIEW

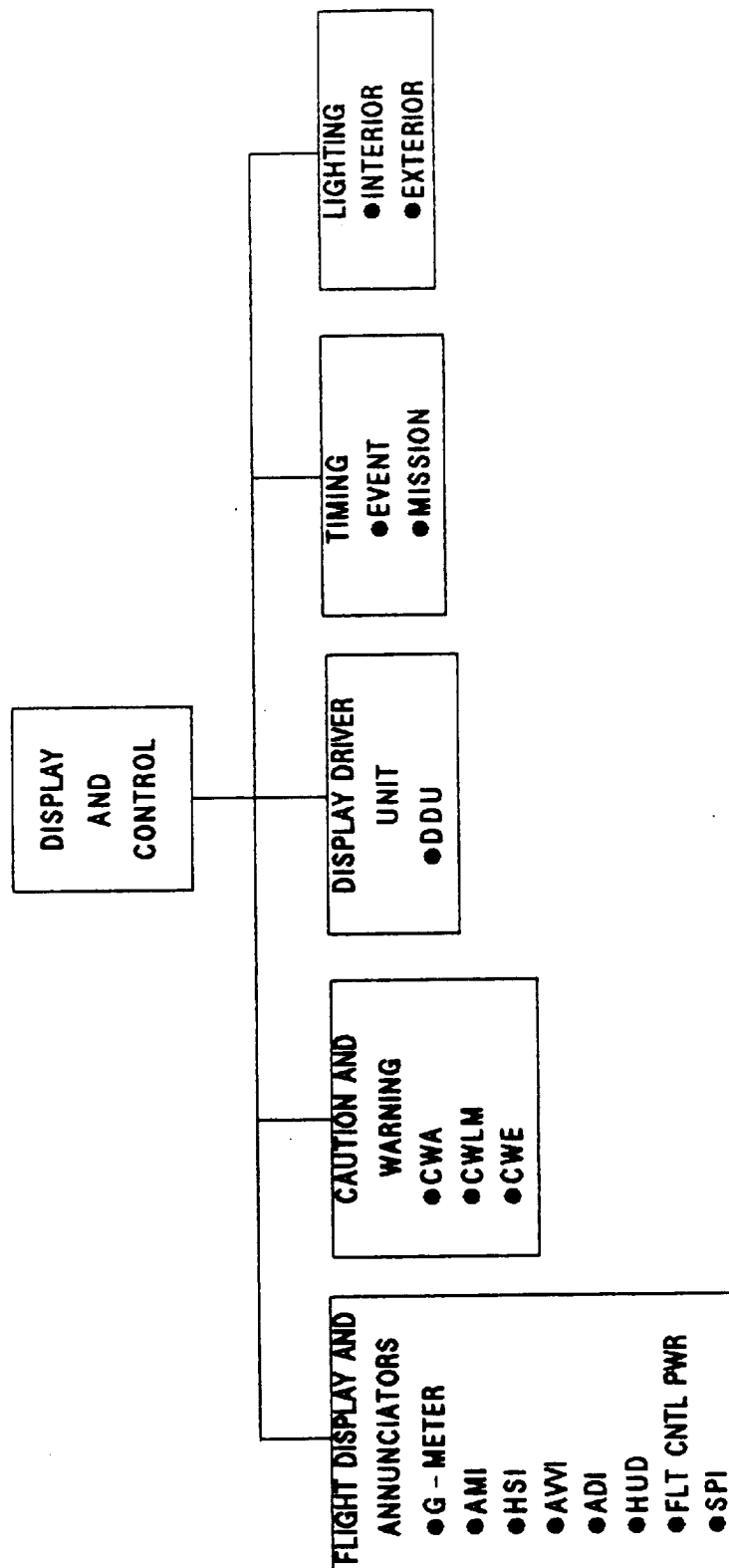
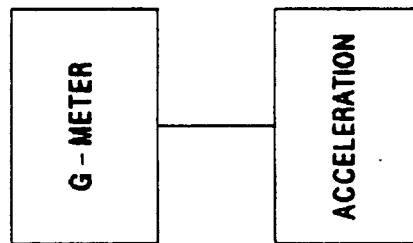


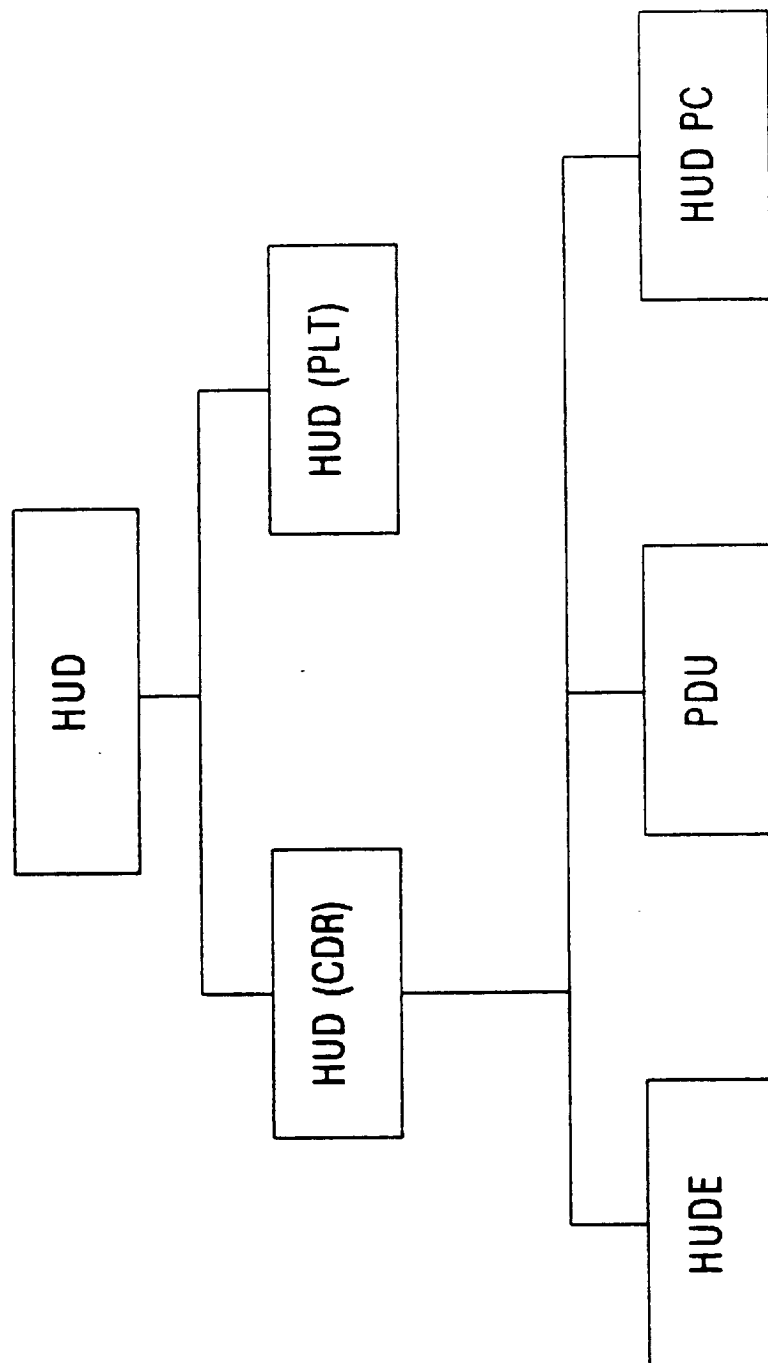
Figure 2 - D&C SUBSYSTEM OVERVIEW

## ACCELERATION INDICATOR



**Figure 3 - D&C ACCELERATION INDICATOR (G-METER)**

## HEAD UP DISPLAY



**Figure 4 - D&C HEADS UP DISPLAY (HUD)**

# ALPHA/MACH INDICATOR

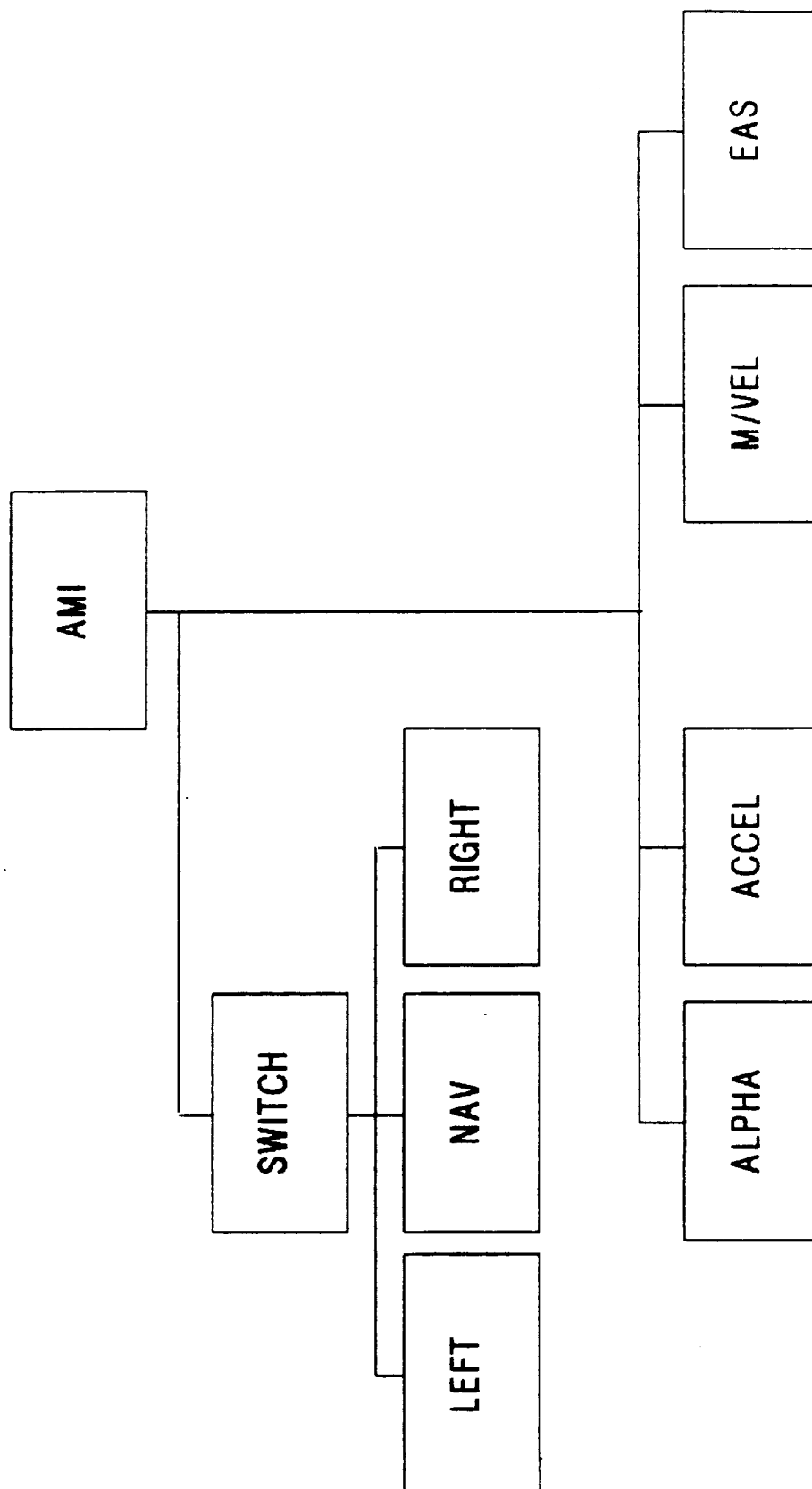


Figure 5 - D&C ALPHA/MACH INDICATOR (AMI)

# HORIZONTAL SITUATION INDICATOR

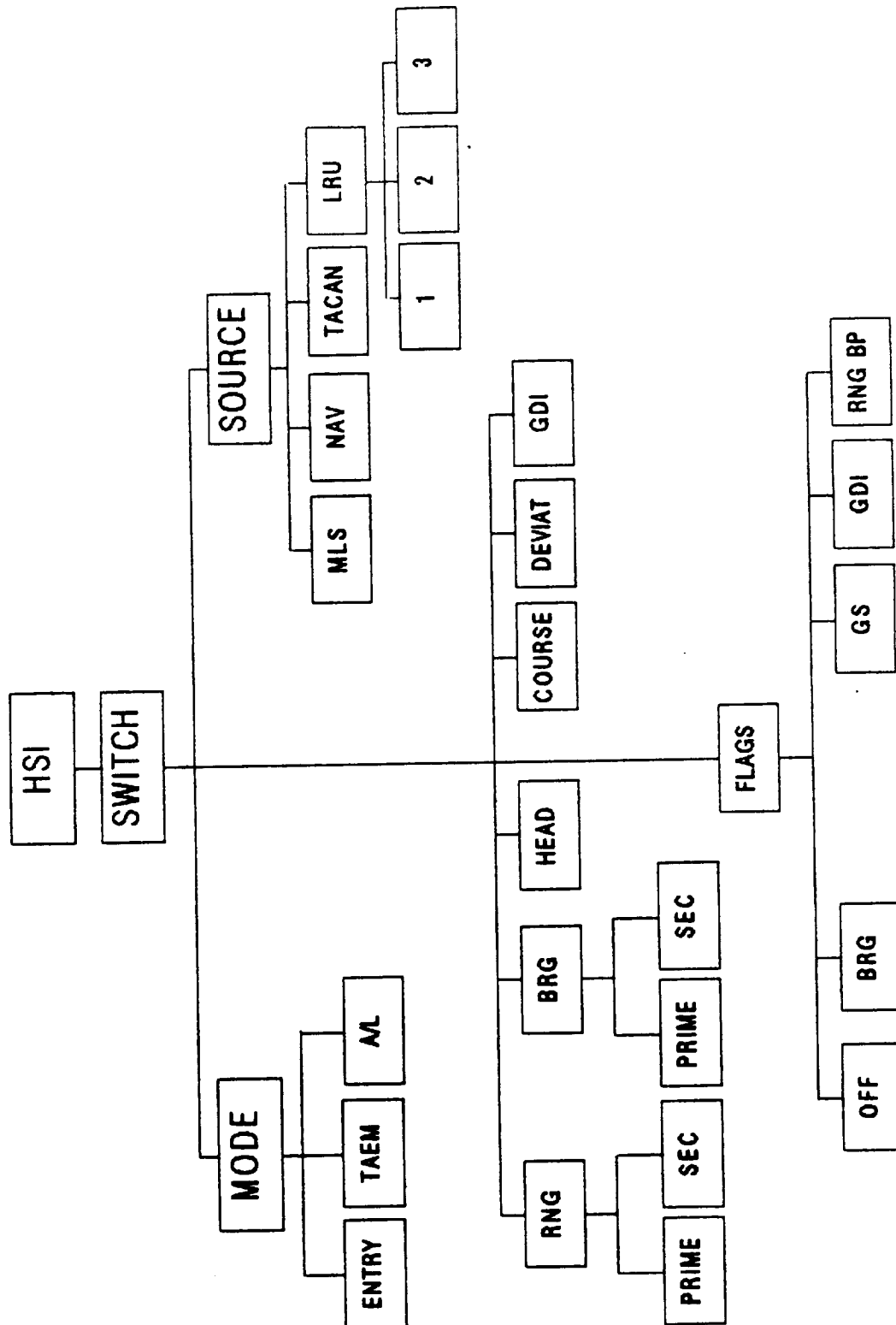


Figure 6 - D&C HORIZONTAL SITUATION INDICATOR (HSI)

# ATTITUDE DIRECTOR INDICATOR

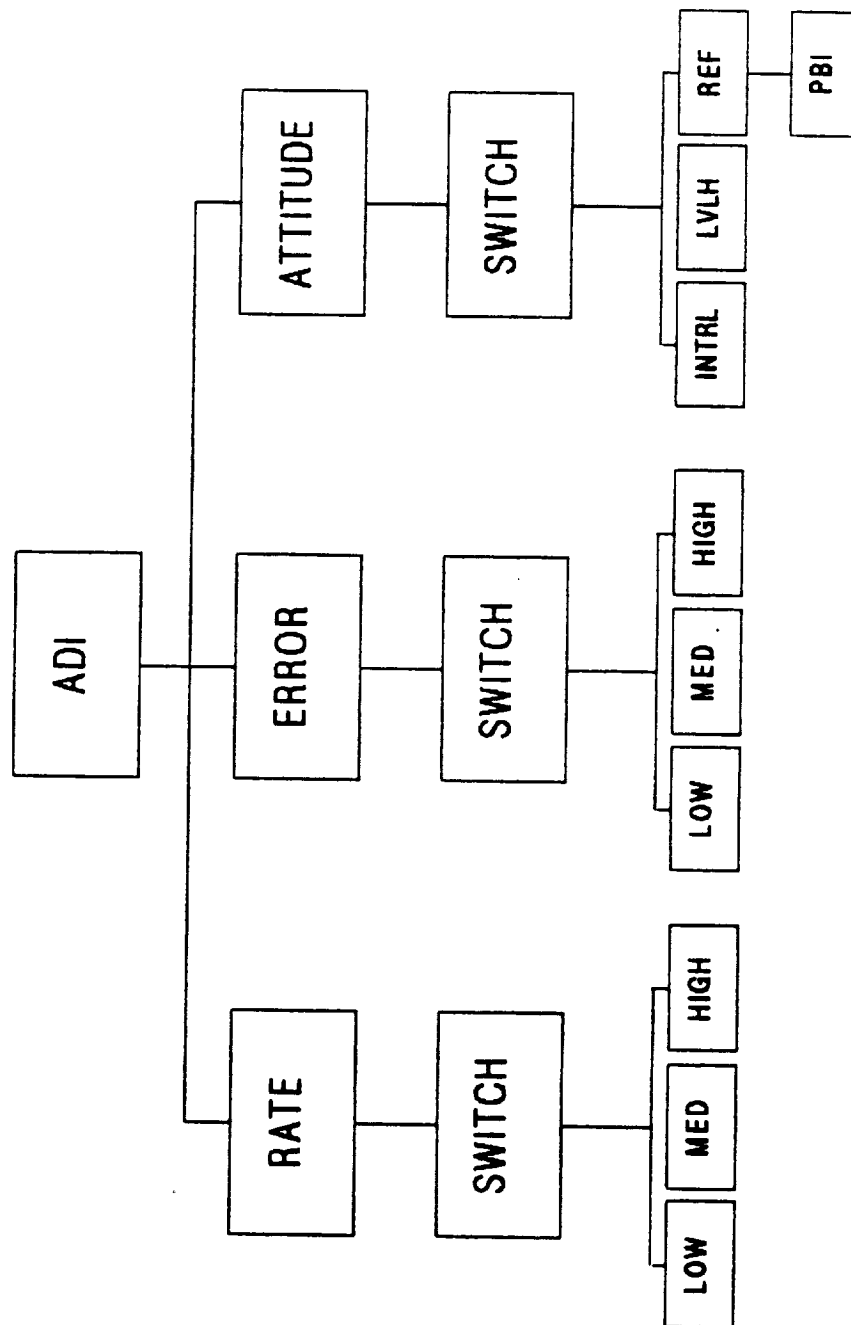


Figure 7 - D&C ATTITUDE DIRECTOR INDICATOR (ADI)

## OMS/RCS PROPELLANT QUANTITY INDICATOR

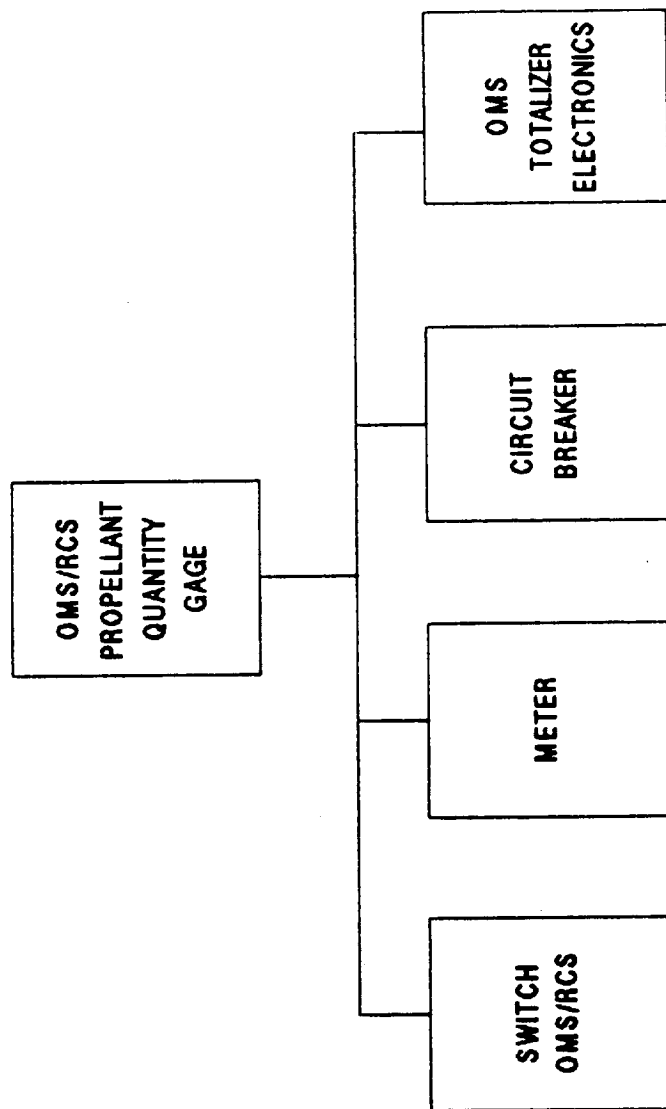
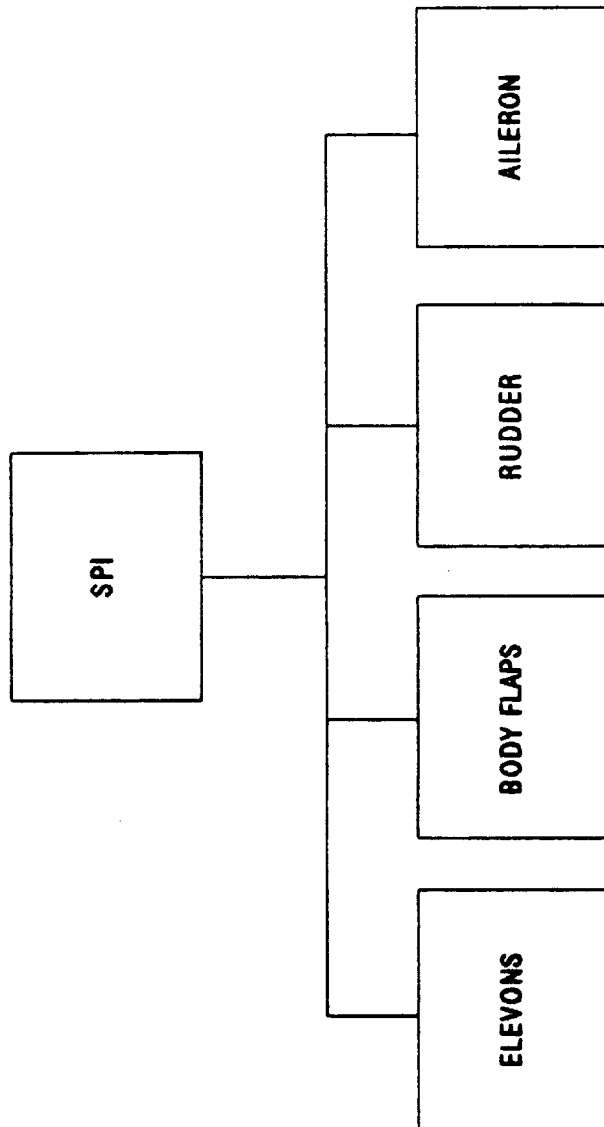


Figure 8 - D&C PROPELLANT QUANTITY INDICATOR (PQI)

## SURFACE POSITION INDICATOR



**Figure 9 - D&C SURFACE POSITION INDICATOR (SPI)**



# ALTITUDE/VERTICAL VELOCITY INDICATOR

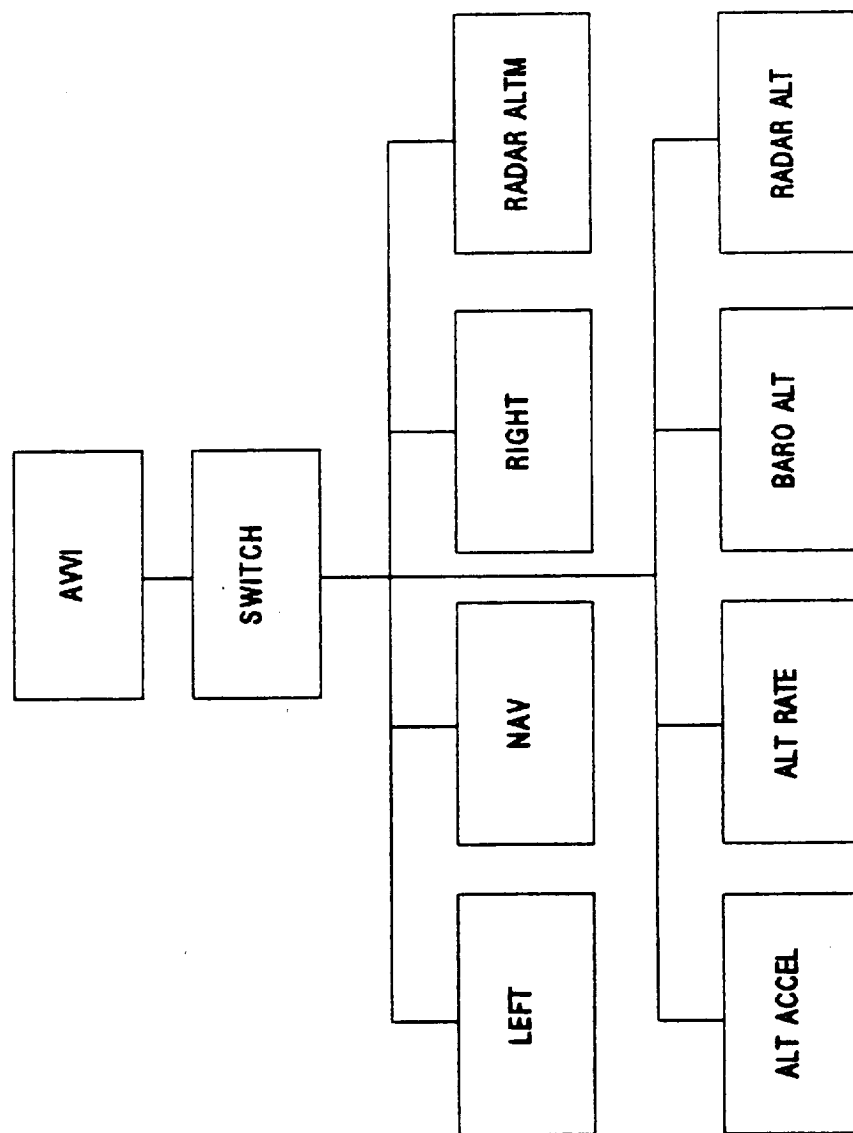
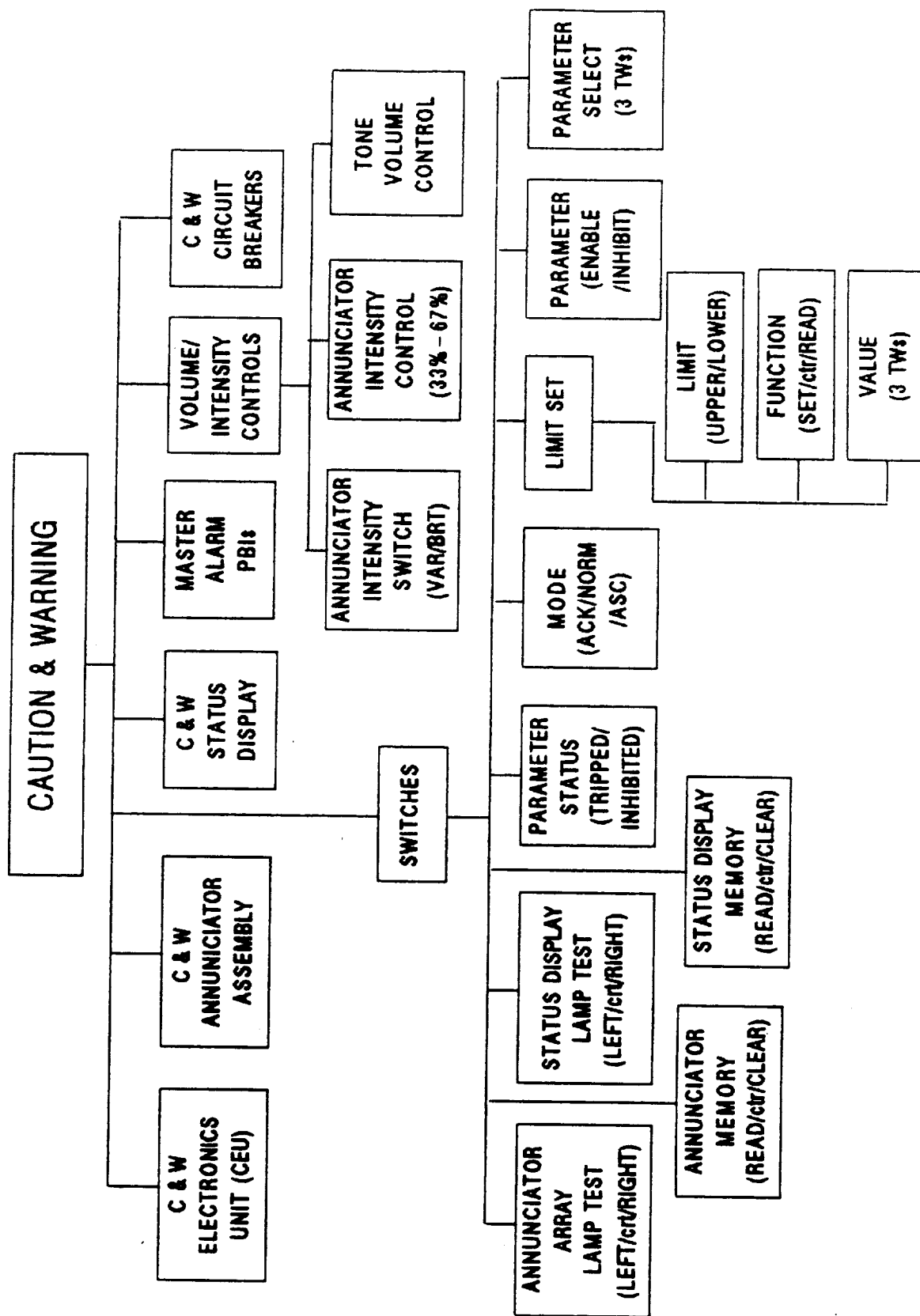
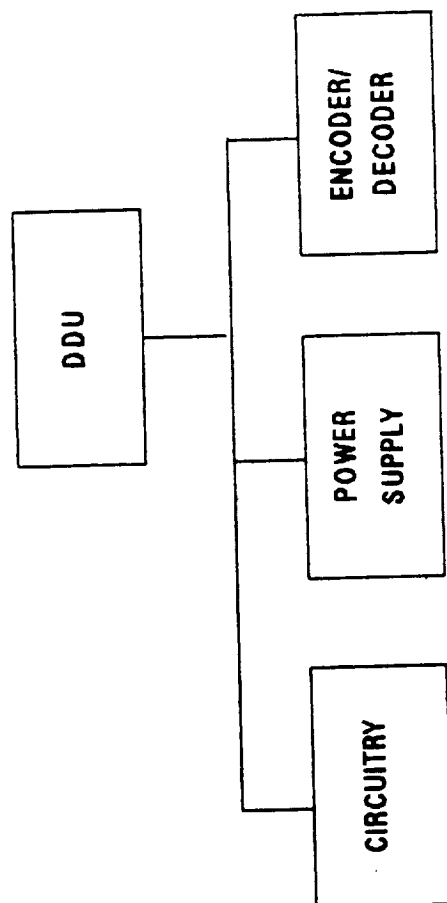


Figure 10 - D&C ALT/VERTICAL VELOCITY INDICATOR (AVVI)

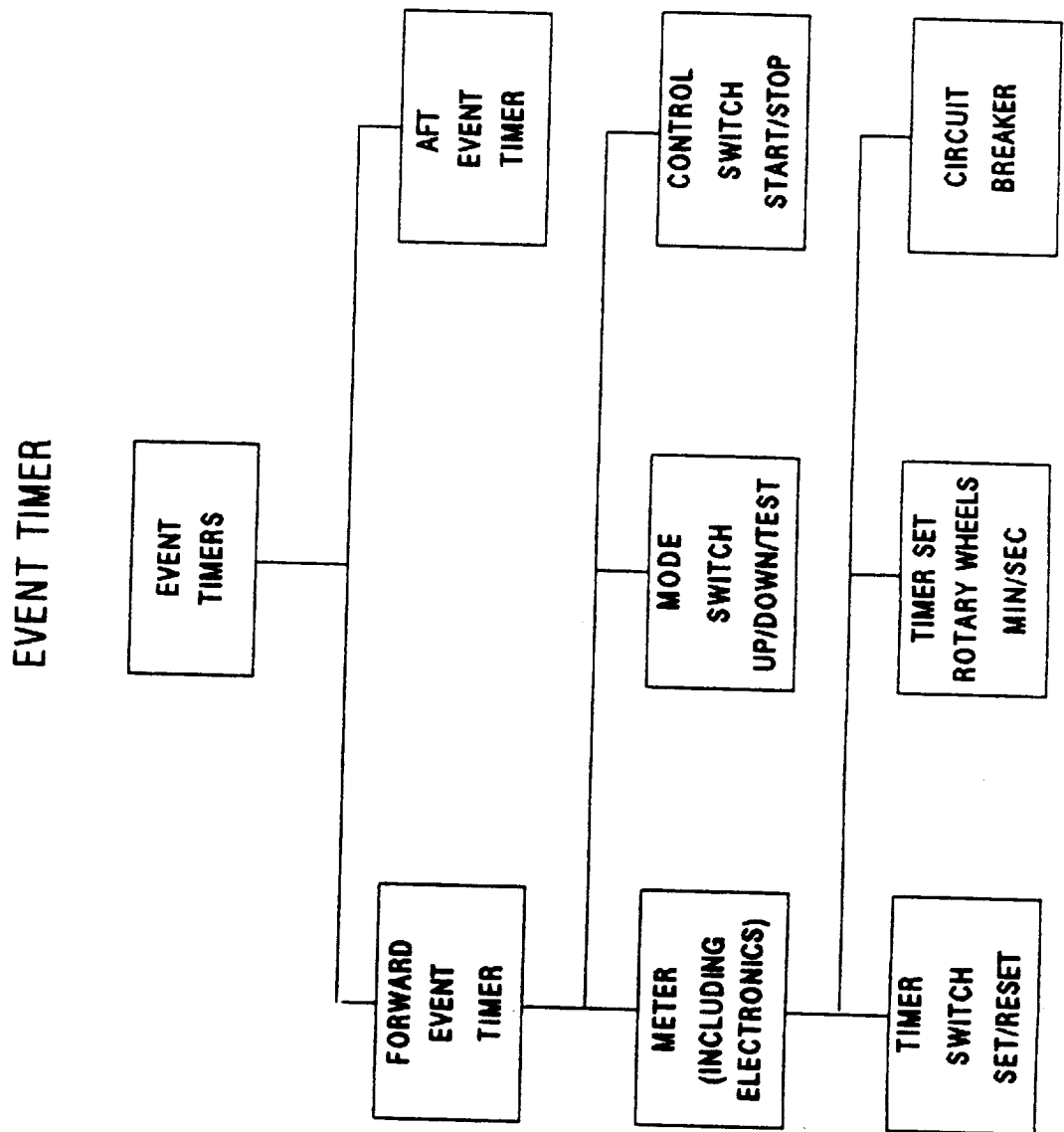


**Figure 11 - D&C CAUTION AND WARNING ASSEMBLY (CWA)**

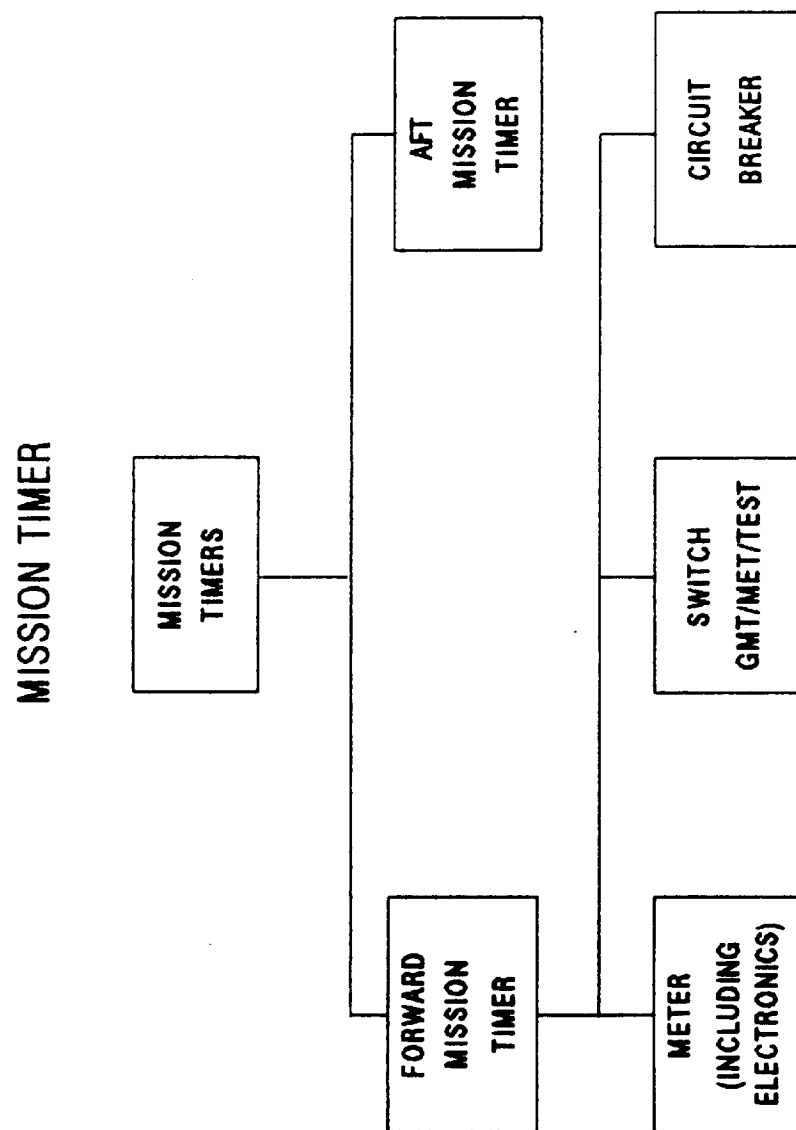
## DISPLAY DRIVER UNIT (DDU)



**Figure 12 - DISPLAY DRIVER UNIT (DDU)**

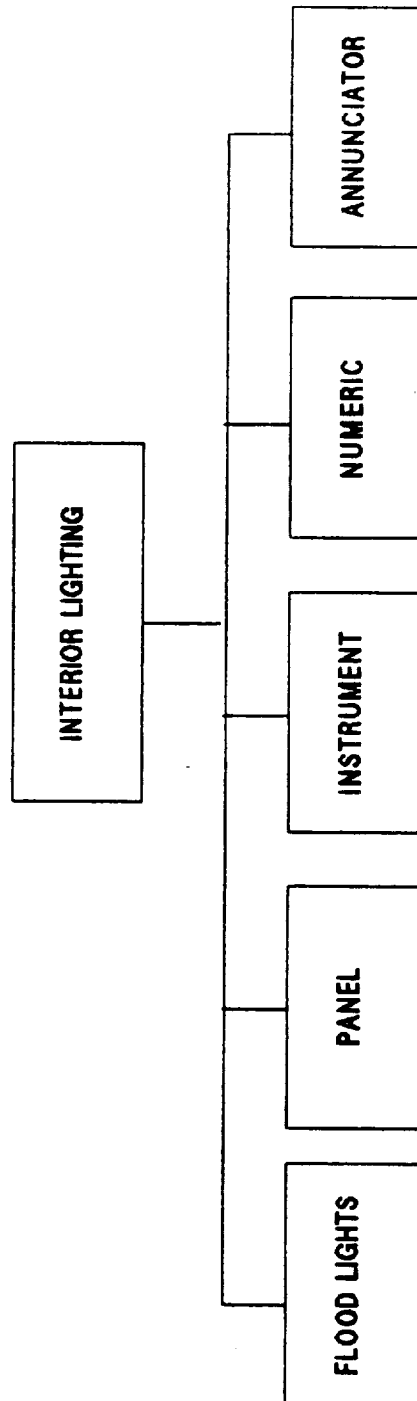


**Figure 13 - D&C EVENT TIMER (ET)**



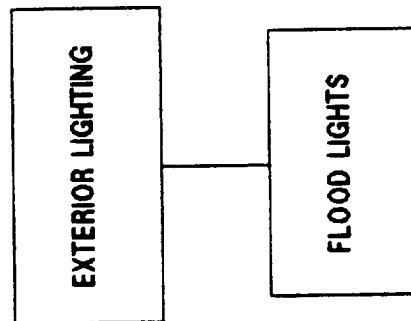
**Figure 14 - D&C MISSION TIMER (MT)**

## INTERIOR LIGHTING



**Figure 15 - D&C INTERIOR LIGHTING**

## EXTERIOR LIGHTING



**Figure 16 - D&C EXTERIOR LIGHTING**

#### 4.0 ASSESSMENT RESULTS

The IOA analysis of the D&C hardware initially generated one hundred thirty four failure mode worksheets and identified eight Potential Critical Items (PCIs) before starting the assessment process. In order to facilitate comparison, thirty additional failure mode analysis worksheets were generated. These analysis results were compared to the NASA Post 51-L baseline of two-hundred sixty-four (264) FMEAs and twenty one CIL items, which were generated using the 10 October 1986 FMEA/CIL instructions. Upon completion of the assessment two-hundred-nineteen (219) of the FMEAs were in agreement. Of the forty-five (45) that remained, all had minor discrepancies that did not affect criticality.

The D&C assessment was divided into the following five categories:

- I. FLIGHT DISPLAYS AND ANNUNCIATORS
- II. CAUTION AND WARNING
- III. DISPLAY DRIVER UNIT
- IV. TIMING DISPLAYS
- V. LIGHTING

A summary of the quantity of NASA FMEAs assessed, versus the recommended IOA baseline, and any issues identified is presented in Table I.

Table I Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
ALL	264	171	45

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table II.

Table II Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
ALL	21	21	0



Table III presents a summary of IOA recommended failure criticalities for the D&C subsystem for the Post 51-L FMEA baseline.

Table III Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	0	16	0	53	6	96	171

Table IV presents a summary of the IOA recommended CIL items for the D&C subsystem for the Post 51-L baseline.

Table IV Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
Number :	0	16	0	5	0	0	21

Appendix C presents the detailed assessment worksheets for each failure mode identified and assessed.

Appendix D highlights the NASA Critical Items and corresponding IOA worksheet ID.

Appendix E contains new IOA analysis worksheets that cover failure modes that were not included in the original analysis. These worksheets were added in order to make a comparison with the NASA FMEAs on these failure modes.

Appendix F provides a cross reference between the NASA FMEA and corresponding IOA worksheet(s). IOA recommendations are also summarized.

The scheme for assigning IOA assessment (Appendix C) and analysis (Appendix E) worksheet numbers is shown in Table V.

Table V		IOA Worksheet Numbers
Component		IOA ID Number
1.	HUD	D&C-101 to 115
2.	DDU	D&C-201 to 205
3.	G-METER	D&C-301 to 305
4.	AMI	D&C-401 to 415
5.	HSI	D&C-501 to 515
6.	AVVI	D&C-601 to 612
7.	SPI	D&C-701 to 705
8.	EVENT TIMER	D&C-1101 to 1110
9.	ADI	D&C-1201 to 1215
10.	MISSION TIMER	D&C-1301 to 1308
11.	CAUTION AND WARNING	D&C-1401 to 1440
12.	ACA	D&C-1601 to 1605
13.	PROP QUANT INDICATOR	D&C-1701 to 1706
14.	INT & EXT LIGHTING	D&C-1801 to 1812
15.	INST PWR CKT	D&C-1901 to 1902, 2401
16.	MEAS ISO RESISTOR	D&C-2001 to 2002
17.	PWR CHT - FUSES	D&C-2201 to 2203
18.	CROSS POINTER INDICATOR	D&C-2301 to 2301

The five categories are discussed in the following sections along with issues, and the recommendations for the Post 51-L FMEA/CIL.

#### 4.1 ASSESSMENT RESULTS - D&C FLIGHT DISPLAYS AND ANNUNCIATORS

Nine components were included in this category. A summary of the quantity of NASA FMEAs assessed for the D&C FLIGHT DISPLAYS and ANNUNCIATORS, versus the recommended baseline, and any issues identified is presented in Table VI.

Component	NASA	IOA	Issues
1. G-METER	2	2	0
2. AMI	10	11	4
3. HSI	20	17	6
4. AVVI	10	9	4
5. ADI	13	12	4
6. HUD	11	13	2
7. PQI	5	6	3
9. FLT CNL PWR	10	4	0
9. SPI	3	3	0
TOTAL	84	77	23

The issues are the results of failure modes analyzed by IOA that were not covered by NASA. The results of these analyses did not raise the criticalities of the components. IOA recommends that NASA consider these failures for FMEA's.

A summary of the quantity of NASA CIL assessed for the D&C flight displays and annunciators, versus the recommended IOA baseline, and any issues identified is presented in Table VII.

Component	NASA	IOA	Issues
1. G-METER	0	0	0
2. AMI	0	0	0
3. HSI	0	0	0
4. AVVI	0	0	0
5. ADI	2	2	0
6. HUD	7	7	0
7. PQI	0	0	0
9. FLT CNL PWR	0	0	0
9. SPI	0	0	0
TOTAL	9	9	0

Table VIII presents a summary of the IOA recommended failure criticalities for the D&C flight displays and annunciators for the Post 51-L FMEA baseline.

TABLE VIII D&C FLIGHT DISPLAYS AND ANNUNCIATOR Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. G-METER	-	-	-	-	-	2	2
2. AMI	-	-	-	9	-	2	11
3. HSI	-	-	-	7	-	10	17
4. AVVI	-	-	-	6	-	3	9
5. ADI	-	2	-	7	-	3	12
6. HUD	-	7	-	4	-	2	13
8. PQI	-	-	-	-	-	6	6
9. FLT CNL PWR	-	-	-	2	-	2	4
9. SPI	-	-	-	-	-	3	3
TOTAL	-	9	-	35	-	33	77

Table IX presents a summary of the IOA recommended CIL items for the D&C Flight Displays and Annunciator for the Post 51-L baseline.

TABLE IX D&C FLIGHT DISPLAY AND ANNUNCIATOR Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. G-METER	-	-	-	-	-	-	-
2. AMI	-	-	-	-	-	-	-
3. HSI	-	-	-	-	-	-	-
4. AVVI	-	-	-	-	-	-	-
5. ADI	-	2	-	-	-	-	2
6. HUD	-	7	-	-	-	-	7
8. PQI	-	-	-	-	-	-	-
9. FLT CNL PWR	-	-	-	-	-	-	-
9. SPI	-	-	-	-	-	-	-
TOTAL	-	9	-	-	-	-	9

#### 4.2 ASSESSMENT RESULTS - D&C CAUTION AND WARNING

Three groups make up this category. A summary of the quantity of NASA FMEAs assessed versus the recommended baseline, and any issues identified is presented in table X.

TABLE X D&C CAUTION AND WARNING Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. CWA	87	46	14
2. CWLM	7	2	2
3. CWE	10	7	3
TOTAL	104	55	19

The issues are the results of analyzing the circuitry as black boxes vs each component of the circuitry. The criticality of these components were not affected.

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table XI.

TABLE XI D&C CAUTION AND WARNING Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. CWA	2	2	0
2. CWLM	0	0	0
3. CWE	0	0	0
TOTAL	2	2	0

Table XII presents a summary of the IOA recommended failure criticalities for the D&C Caution and Warning components for the Post 51-L FMEA baseline.

TABLE XII D&C CAUTION AND WARNING Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CWA	-	1	-	5	-	40	46
2. CWLM	-	-	-	-	-	2	2
3. CWE	-	1	-	-	4	2	7
TOTAL	-	2	-	5	4	44	55

Table XIII presents a summary of the IOA recommended CIL items for the D&C Caution and Warning component for the Post 51-1 baseline.

TABLE XIII D&C CAUTION AND WARNING Summary of IOA Recommended Critical Items							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. CWA	-	1	-	-	-	-	1
2. CWLM	-	-	-	-	-	-	-
3. CWE	-	1	-	-	-	-	1
TOTAL	-	2	-	-	-	-	2

#### 4.3 ASSESSMENT RESULTS - D&C DISPLAY DRIVER UNIT

One group make up this category. A summary of the quantity of NASA FMEAs assessed, versus the recommended baseline, and any issues identified is presented in Table XIV.

TABLE XIV D&C DISPLAY DRIVER UNIT Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. DDU	22	19	1
TOTAL	22	19	1

The issue arose due to a failure mode analyzed by IOA and not by NASA. The criticality of the component was not affected.

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table XV.

TABLE XV D&C DISPLAY DRIVER UNIT Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. DDU	10	10	0
TOTAL	10	10	0

Table XVI presents a summary of the IOA recommended failure criticalities for the Display Driver Unit for the Post 51-1 FMEA baseline.

TABLE XVI D&C DISPLAY DRIVER UNIT Summary of IOA Recommended Failure Criticalities						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	-	4	-	14	1	19

Table XVII presents a summary of IOA recommended CIL items for the Post 51-L baseline.

TABLE XVII D&C DISPLAY DRIVER UNIT Summary of IOA Recommended Critical Items						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	-	4	-	6	-	10

#### 4.4 ASSESSMENT RESULTS - D&C TIMING

Two groups make up this category. A summary of the quantity of NASA FMEAs assessed for the D&C Timing, versus the recommended baseline, and any issues identified is presented in Table XVIII.

TABLE XVIII D&C TIMING Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. EVENT	8	8	1
2. MISSION	6	6	1
TOTAL	14	14	2

The issues are the results of IOA analyzing a failure mode not covered by NASA. The criticality of the components were not affected.



A summary of the quantity of NASA CIL items assessed, versus the recommended baseline, and any issues identified is presented in Table XIX.

TABLE XIX D&C TIMING Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. EVENT	0	0	0
2. MISSION	0	0	0
TOTAL	0	0	0

Table XX presents a summary of the IOA recommended failure criticalities of the D&C Timing component for the Post 51-L FMEA baseline.

TABLE XX D&C TIMING Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. EVENT	-	-	-	-	-	8	8
2. MISSION	-	-	-	-	-	6	6
TOTAL	-	-	-	-	-	14	14

Table XXI presents a summary of the IOA recommended CIL items for the D&C Timing component for the Post 51-L baseline.

TABLE XXI D&C TIMING Summary of IOA Recommended Critical Items						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	-	-	-	-	-	-

#### 4.5 ASSESSMENT RESULTS - LIGHTING

Two groups make up this category. A summary of the quantity of NASA FMEAs assessed for the D&C Lighting component, versus the recommended baseline, and any issues identified is presented in Table XII.

TABLE XXII D&C LIGHTING Summary of IOA FMEA Assessment			
Component	NASA	IOA	Issues
1. INTERIOR	30	4	0
2. EXTERIOR	10	2	0
TOTAL	40	6	0

A summary of the quantity of NASA CIL items assessed, versus the recommended IOA baseline, and any issues identified is presented in Table XXIII.

TABLE XXIII D&C LIGHTING Summary of IOA CIL Assessment			
Component	NASA	IOA	Issues
1. INTERIOR	0	0	0
2. EXTERIOR	0	0	0
TOTAL	0	0	0

Table XXIV presents a summary of the IOA recommended failure criticalities for the D&C Lighting component for the Post 51-L FMEA baseline.

TABLE XXIV D&C LIGHTING Summary of IOA Recommended Failure Criticalities							
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	3/3	TOTAL
1. INTERIOR	-	-	-	-	-	4	4
2. EXTERIOR	-	-	-	-	1	1	2
TOTAL	-	-	-	-	1	5	6

Table XXV presents a summary of the IOA recommended CIL items for the Post 51-L baseline.

TABLE XXV D&C LIGHTING Summary of IOA Recommended Critical Items						
Criticality:	1/1	2/1R	2/2	3/1R	3/2R	TOTAL
Number :	-	-	-	-	-	-

## 5.0 REFERENCES

Reference documentation available from NASA and Rockwell was used in the analysis. The documentation used included the following:

1. JSC-18863, Guidance and Control Systems Briefs, 9-30-85
2. CONT 2102, Dedicated Display workbook, 2-1-82
3. SSSH System Drawing 1 G&C DISP 1 DWG 9.1
4. JSC-12820, STS operational Flight Rules, PCN-1, 2-14-86
5. CONT 2102, Caution and Warning Workbook 8-5-83
6. JSC- 11174 SSSH System Drawing 20 HUD, DWG 9.20A
7. VS70-973009 Integrated Schematic HEAD UP DISPLAY 10-22-80
8. DISPLAY and CONTROL FSSR STS83-0020C
9. MC409-0023 DDU Specification 6-6-77
10. JSC - 11174 SSSH System Drawing 10 TIM DWG 8.10
11. VS70-730129, Schematic Diagram, Caution & Warning  
11-12-80
12. Shuttle Flight Operation Manual 8-31-84
13. JSC - 11174, SSSH System Drawing C&W DWG 5.2
14. JSC - 18691, FDF Malfunction Procedures 10-10-85
15. VS70-973099, Schematic Diagram, Event & Mission Timers
16. JSC - 11174 SSSH System Drawing OMS GAUGE DWG 11.2
17. JSC - 11174 SSSH System Drawing 3 ANNUN DWG 4.2 5-21-85

**APPENDIX A**  
**ACRONYMS**

AA	-	Accelerometer Assembly
ACA	-	Annunciator Control Assembly
ACCEL	-	Acceleration
A/D	-	Analog to Digital
ADI	-	Attitude Direction Indicator
ADTA	-	Air Data Transducer Assembly
AID	-	Analog Input Differential
A/L	-	Autoland
ALC	-	Aft Load Controller
ALPHA	-	Angle of Attack
ALT	-	Altitude
ALTM	-	Altimeter
AMI	-	Alpha Mach Indicator
AOA	-	Abort Once Around
APC	-	Aft Power Controller
ASA	-	Aerosurface Servo Amplifier
ASC	-	Ascent
ATO	-	Abort To Orbit
ATVC	-	Ascent Thrust Vector Control
AVVI	-	Altitude Vertical Velocity Indicator
BARO	-	Barometric
BF	-	Body Flap
BFS	-	Backup Flight System
BITE	-	Built-In Test Equipment
BP	-	Barber Pole
BRG	-	Bearing
BRT	-	Bright
CB	-	Circuit Breaker
CDR	-	Commander
CEU	-	Caution and Warning Electronic Unit
CIL	-	Critical Items List
CKT	-	Circuit
CNL	-	Control
CNTRLR	-	Controller
COAS	-	Crew Optical Alignment Sight
CRIT	-	Criticality
CRT	-	Cathode Ray Tube
CSS	-	Control Stick Steering
CTR	-	Center
CWA	-	Caution and Warning Annunciator
CWE	-	Caution and Warning Electronic
CWLM	-	Caution and Warning Limit Module
C&W	-	Caution and Warning System
DAP	-	Digital Auto Pilot
DDU	-	Display Driver Unit
DEU	-	Display Electronics Unit
DU	-	Display Unit

## ACRONYMS

DEVIAT-	Deviation
DISC -	Discrete
DPS -	Data Processing System
EAS -	Equivalent Air Speed
EIU -	Engine Interface Unit
EVA -	Extra Vehicular Activity
FA -	Flight Aft
FCOS -	Flight Control Operating System
FCS -	Flight Control System
FDIR -	Fault Detection, Identification, Reconfiguration
FF -	Flight Forward
FLT -	Flight
FM -	Failure Mode
FMEA -	Failure Mode and Effects Analysis
FSM -	Fault Summary Message
FSSR -	Functional Subsystem Software Requirements
FSW -	Flight Software
FUNC -	Function
GDI -	Glideslope Deviation Indicator
GMT -	Greenwich Mean Time
GPC -	General Purpose Computer
GS -	Glideslope
GSE -	Ground Support Equipment
HEAD -	Heading
HSI -	Horizontal Situation Indicator
HUD -	Head Up Display
HUDE -	Head Up Display Electronics
H/W -	Hardware
IMU -	Inertial Measurement Unit
INTRL -	Inertial
IOA -	Independent Orbiter Assessment
LF -	Launch Forward
LL -	Launch Left
LPS -	Launch Processing System
LR -	Launch Right
LRU -	Line Replaceable Unit
LVLH -	Local Vertical Local Horizontal
MAN -	Manual
MC -	Memory Configuration
MCC -	Mission Control Center
MCDS -	Multifunction CRT Display System
MDAC -	McDonnell Douglas Astronautics Company
MDM -	Multiplexer/Demultiplexer
MEC -	Main Engine Controller
MED -	Medium
MET -	Mission Elapsed Time
MIN -	Minimum
MLS -	Microwave Landing System

## ACRONYMS

MM	-	Major Mode
MSK	-	Manual Select Keyboard
M/VEL	-	Mach/Velocity
MVS	-	Mid Value Select
NA	-	Not Applicable
NASA	-	National Aeronautics and Space Administration
NAV	-	Navigation
NORM	-	Normal
NSTS	-	National Space Transportation System
OA	-	Operational Aft
OF	-	Operational Forward
OMRSD	-	Operational Maintenance Requirements and Specifications Document
OMS	-	Orbital Maneuvering System
OPS	-	Operational Sequence
P	-	Pitch
PBI	-	Pushbutton Indicator
PCI	-	Potential Critical Item
PCM	-	Pulse Code Modulation
PDU	-	Pilot Display Unit
PLT	-	Pilot
POS	-	Position
PWR	-	Power
R	-	Roll
REF	-	Reference
RCS	-	Reaction Control System
RGA	-	Rate Gyro Assembly
RHC	-	Rotational Hand Controller
RI	-	Rockwell International
RJD	-	Reaction Jet Driver
RM	-	Redundancy Management
RNG	-	Range
ROT	-	Rotation
RPC	-	Remote Power Controller
RPTA	-	Rudder Pedal Transducer Assembly
RS	-	Redundant Set
RTLS	-	Return To Landing Site
SBTC	-	Speed Brake Thrust Controller
SEC	-	Secondary
SF	-	Selection Filter
SM	-	Systems Management
SOP	-	Subsystem Operating Program
SPI	-	Surface Position Indicator
SRB	-	Solid Rocket Booster
SSME	-	Space Shuttle Main Engine
ST	-	Star Tracker
STS	-	Space Transportation System
SW	-	Switch

## ACRONYMS

S/W	-	Software
TACAN	-	Tactical Air Navigation
TAL	-	Transatlantic Abort Landing
TAME	-	Terminal Area Energy Management
TD	-	Touch Down
THC	-	Translational Hand Controller
TRANS	-	Translation
TVC	-	Thrust Vector Control
TW	-	Thumbwheel
VAR	-	Variable
VDC	-	Volts Direct Current
VERN	-	Vernier
Y	-	Yaw



## **APPENDIX B**

### **DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

- B.1 Definitions
- B.2 Project Level Ground Rules and Assumptions
- B.3 Subsystem-Specific Ground Rules and Assumptions

**APPENDIX B**  
**DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

**B.1 Definitions**

Definitions contained in NSTS 22206, Instructions For Preparation of FMEA/CIL, 10 October 1986, were used with the following amplifications and additions.

**INTACT ABORT DEFINITIONS:**

**RTLS** - begins at transition to OPS 6 and ends at transition to OPS 9, post-flight

**TAL** - begins at declaration of the abort and ends at transition to OPS 9, post-flight

**AOA** - begins at declaration of the abort and ends at transition to OPS 9, post-flight

**ATO** - begins at declaration of the abort and ends at transition to OPS 9, post-flight

**CREDIBLE (CAUSE)** - an event that can be predicted or expected in anticipated operational environmental conditions. Excludes an event where multiple failures must first occur to result in environmental extremes

**CONTINGENCY CREW PROCEDURES** - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

**EARLY MISSION TERMINATION** - termination of onorbit phase prior to planned end of mission

**EFFECTS/RATIONALE** - description of the case which generated the highest criticality

**HIGHEST CRITICALITY** - the highest functional criticality determined in the phase-by-phase analysis

**MAJOR MODE (MM)** - major sub-mode of software operational sequence (OPS)

**MC** - Memory Configuration of Primary Avionics Software System (PASS)

**MISSION** - assigned performance of a specific Orbiter flight with payload/objective accomplishments including orbit phasing and altitude (excludes secondary payloads such as GAS cans, middeck P/L, etc.)

MULTIPLE ORDER FAILURE - describes the failure due to a single cause or event of all units which perform a necessary (critical) function

OFF-NOMINAL CREW PROCEDURES - procedures that are utilized beyond the standard malfunction procedures, pocket checklists, and cue cards

OPS - software operational sequence

PRIMARY MISSION OBJECTIVES - worst case primary mission objectives are equal to mission objectives

PHASE DEFINITIONS:

PRELAUNCH PHASE - begins at launch count-down Orbiter power-up and ends at moding to OPS Major Mode 102 (liftoff)

LIFTOFF MISSION PHASE - begins at SRB ignition (MM 102) and ends at transition out of OPS 1 (Synonymous with ASCENT)

ONORBIT PHASE - begins at transition to OPS 2 or OPS 8 and ends at transition out of OPS 2 or OPS 8

DEORBIT PHASE - begins at transition to OPS Major Mode 301 and ends at first main landing gear touchdown

LANDING/SAFING PHASE - begins at first main gear touchdown and ends with the completion of post-landing safing operations

**APPENDIX B**  
**DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

**B.2 IOA Project Level Ground Rules and Assumptions**

The philosophy embodied in NSTS 22206, Instructions for Preparation of FMEA/CIL, 10 October 1986, was employed with the following amplifications and additions.

1. The operational flight software is an accurate implementation of the Flight System Software Requirements (FSSRs).

RATIONALE: Software verification is out-of-scope of this task.

2. After liftoff, any parameter which is monitored by system management (SM) or which drives any part of the Caution and Warning System (C&W) will support passage of Redundancy Screen B for its corresponding hardware item.

RATIONALE: Analysis of on-board parameter availability and/or the actual monitoring by the crew is beyond the scope of this task.

3. Any data employed with flight software is assumed to be functional for the specific vehicle and specific mission being flown.

RATIONALE: Mission data verification is out-of-scope of this task.

4. All hardware (including firmware) is manufactured and assembled to the design specifications/drawings.

RATIONALE: Acceptance and verification testing is designed to detect and identify problems before the item is approved for use.

5. All Flight Data File crew procedures will be assumed performed as written, and will not include human error in their performance.

RATIONALE: Failures caused by human operational error are out-of-scope of this task.

6. All hardware analyses will, as a minimum, be performed at the level of analysis existent within NASA/Prime Contractor Orbiter FMEA/CILs, and will be permitted to go to greater hardware detail levels but not lesser.

RATIONALE: Comparison of IOA analysis results with other analyses requires that both analyses be performed to a comparable level of detail.

7. Verification that a telemetry parameter is actually monitored during AOS by ground-based personnel is not required.

RATIONALE: Analysis of mission-dependent telemetry availability and/or the actual monitoring of applicable data by ground-based personnel is beyond the scope of this task.

8. The determination of criticalities per phase is based on the worst case effect of a failure for the phase being analyzed. The failure can occur in the phase being analyzed or in any previous phase, whichever produces the worst case effects for the phase of interest.

RATIONALE: Assigning phase criticalities ensures a thorough and complete analysis.

9. Analysis of wire harnesses, cables, and electrical connectors to determine if FMEAs are warranted will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

10. Analysis of welds or brazed joints that cannot be inspected will not be performed nor FMEAs assessed.

RATIONALE: Analysis was substantially complete prior to NSTS 22206 ground rule redirection.

11. Emergency system or hardware will include burst discs and will exclude the EMU Secondary Oxygen Pack (SOP), pressure relief valves and the landing gear pyrotechnics.

RATIONALE: Clarify definition of emergency systems to ensure consistency throughout IOA project.

**APPENDIX B**  
**DEFINITIONS, GROUND RULES, AND ASSUMPTIONS**

**B.3 D&C - Specific Ground Rules and Assumptions**

1. The failure analyses will be conducted to the black box level for components whose output serves only one function unless a lower level is required to be consistent with the existing FMEAs.

RATIONALE: The definition credible failure modes are oriented toward the black box functional output.

2. For black boxes whose output serves more than one function, the analysis will go to a level that effects each of the different functions.

RATIONALE: The defined credible failure modes are oriented toward the black box functional output.

3. Credible failure modes for most black boxes are defined to be

- (1) No output
- (2) Erroneous output (Output that redundancy management will detect as a failure.)
- (3) Premature output (Output occurs without command. This may not be credible for all black boxes.)

RATIONALE: Covers worst case effects on function.

4. Credible failures for switches are defined to be

- (1) Fails on (Power cannot be shut off by switch.)
- (2) Fails off (Power cannot be turned on.)
- (3) Short to ground
- (4) Internal short (Short across switch contacts.)

RATIONALE: Covers worst case effects on function.

5. Power circuits analysis does not include the resistors that reside between the power circuit and a MDM.

RATIONALE: These resistors provide signal conditioning for the MDM and are not a part of the power circuit.

## APPENDIX C DETAILED ASSESSMENT

This section contains the IOA assessment worksheets generated during the Assessment of the Display and Controls Subsystem. The information on these worksheets facilitates the comparison of the NASA FMEA/CIL (Pre and Post 51-L) to the IOA detailed analysis worksheets included in Appendix E. Each of these worksheets identifies the NASA FMEA being assessed, corresponding MDAC Analysis Worksheet ID (Appendix E), hardware item, criticality, redundancy screens, and recommendations. For each failure mode, the highest assessed hardware and functional criticality is compared and discrepancies noted as "N" in the compare row under the column where the discrepancy occurred.

### LEGEND FOR IOA ASSESSMENT WORKSHEETS -----

#### Hardware Criticalities:

- 1 = Loss of life or vehicle
- 2 = Loss of mission or next failure of any redundant item (like or unlike) could cause loss of life/vehicle
- 3 = All others

#### Functional Criticalities:

- 1R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of life or vehicle
- 2R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of mission

#### Redundancy Screens A, B and C:

- P = Passed Screen
- F = Failed Screen
- NA = Not Applicable

#### NASA Data :

- Baseline = NASA FMEA/CIL
- New = Baseline with Proposed Post 51-L Changes

#### CIL Item :

- X = Included in CIL

#### Compare Row :

- N = Non compare for that column (deviation)

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-101  
NASA FMEA #: 05-3-12601-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 101  
ITEM: HUDE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA'S CRITICALITY. CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT LANDING. ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON FAILURES AFTER COMMITTING TO NIGHT LANDINGS.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-102  
NASA FMEA #: 05-3-12601-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 102  
ITEM: HUDE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; LOSS OF OUTPUT. AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA'S CRITICALITY. CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT LANDING. ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON FAILURES AFTER COMMITTING TO NIGHT LANDINGS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-103  
NASA FMEA #: 05-3-12602-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 103  
ITEM: PDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ NA]	[ NA]	[ NA]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT, ERRATIC DISP. IOA FAILURE MODE; ERROENOUS OUTPUT. AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA'S CRITICALITY. CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMITTING TO NIGHT LANDING. ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON THE FAILURE OCCURRING AFTER COMITTING TO A NIGHT LANDING.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-104  
NASA FMEA #: 05-3-12602-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 104  
ITEM: PDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 1 /1 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, DEFECTIVE CRT. IOA FAILURE MODE; LOSS OF OUTPUT. AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA'S CRITICALITY. CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT LANDING. ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON A FAILURE AFTER COMMITTING TO NIGHT LANDING.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-105  
NASA FMEA #: 05-3-12603-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 105  
ITEM: SWITCH, DATA BUS SELECT 1,2,3,4

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, CLOSE, SHORT. IOA FAILURE MODE;  
FAIL TO TRANSFER. NO FMEA REQUIRED DUE TO CRITICALITY OF 3/3.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-106  
NASA FMEA #: 05-6Q-2505-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 106  
ITEM: RESISTOR, CURRENT LIMITING

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN. IOA FAILURE MODE; FAIL OPEN. AFTER  
ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. CRIT  
2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT LANDING.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-107  
NASA FMEA #: 05-6Q-2214-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 107  
ITEM: SWITCH - ON/OFF

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN-1. IOA FAILURE MODE; FAIL OPEN.  
CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT  
LANDING. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON  
THE FAILURE OCCURRING AFTER COMMITTING TO A NIGHT LANDING.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-107A  
NASA FMEA #: 05-6Q-2214-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 107  
ITEM: SWITCH - ON/OFF

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMMITTING TO NIGHT  
LANDING. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY, ADDITIONAL HAZARD ANALYSIS SHOULD BE PERFORMED ON  
FAILURES OCCURRING AFTER COMMITTING TO NIGHT LANDINGS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-108  
NASA FMEA #: 05-6Q-2214-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 108  
ITEM: SWITCH - ON/OFF

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE. CIRCUIT  
NORMALLY CLOSED DURING FLIGHT.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-109  
NASA FMEA #: 05-6Q-2307-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 109  
ITEM: RPC

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAILED CLOSED. IOA FAILURE MODE; FAILED  
CLOSED. NOT CRITICAL FOR FLIGHT. RPC NORMALLY CLOSED WHEN USE  
OF HUD IS CRITICAL.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-110  
NASA FMEA #: 05-6Q-2307-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 110  
ITEM: RPC

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 1 /1 ]	[ NA ]	[ NA ]	[ NA ]	[ X ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, SHORT TO GROUND. IOA FAILURE MODE; LOSS OF OUTPUT. CRIT 2/1R IF FAILURE DETECTED PRIOR TO COMITTING TO NIGHT LANDING. ADDITOINAL HAZARD ANALYSIS OF THIS FAILURE OCCURS AFTER COMITTING TO A NIGHT LANDING. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITIES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-201  
NASA FMEA #: 05-3-12130-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 201  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ N /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-201A  
NASA FMEA #: 05-3-12130-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 201  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT TO BFC. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-201B  
NASA FMEA #: 05-3-12130-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 201  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF PWR OUTPUT TO NWS. IOA FAILURE MODE;  
NO OUTPUT. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE  
DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW  
RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-201C  
NASA FMEA #: 05-3-12130-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 201  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF PWR TO 1 OF 3 PWR SUPPLIES. IOA  
FAILURE MODE; LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-202  
NASA FMEA #: 05-3-12130-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 202  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA'S CRITICALITY. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-202A  
NASA FMEA #: 05-3-12130-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 202  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
-----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT TO NWS. IOA FAILURE MODE;  
ERRONEOUS OUTPUT. ERRONEOUS OUTPUT ON ALL REDUNDANT ITEMS MAY  
CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VEHICLE STATUS  
REQUIRING CREW RESPONSE.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-202B  
NASA FMEA #: 05-3-12130-7

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 202  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT TO 1 OF 3 PWR SUPPLIES. IOA  
FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-202C  
NASA FMEA #: 05-3-12130-8

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 202  
ITEM: DDU

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-203  
NASA FMEA #: 05-6Q-2103-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 203  
ITEM: DDU - DATA BUS SWITCH, & CB

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[ X ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[ N ]	[    ]	[ N ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]    [ P ]    [ P ]    [ P ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, FAIL TO CONDUCT. IOA  
FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-203A  
NASA FMEA #: 05-3-12131-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 203  
ITEM: DDU - DATA BUS SWITCH, & CB

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-204  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 204  
ITEM: DDU - DATA BUS SWITCH, & CB

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; FAILED CLOSED, SHORT CONTACT TO CONTACT SWITCH AND CB NORMALLY CLOSED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/14/88  
ASSESSMENT ID: D&C-205X  
NASA FMEA #: 05-3-12200A-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 205  
ITEM: DDU-CDR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF POWER OUTPUT. IOA FAILURE MODE; LOSS OF POWER OUTPUT. NO DIFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-206X  
NASA FMEA #: 05-3-12200A-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 206  
ITEM: DDU-CDR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-207X  
NASA FMEA #: 05-3-12200B-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 207  
ITEM: DDU-PLT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF POWER OUTPUT. IOA FAILURE MODE; LOSS OF POWER OUTPUT. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-208X  
NASA FMEA #: 05-3-12200B-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 208  
ITEM: DDU-PLT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ F ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS POWER OUTPUT. IOA FAILURE MODE;  
ERRONEOUS POWER OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-209X  
NASA FMEA #: 05-6Q-2103A-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 209  
ITEM: PWR CKT-CB

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, (CDR). IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-210X  
NASA FMEA #: 05-6Q-2103B-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 210  
ITEM: PWR CKT-CB

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ F ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, (PLT). IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-211X  
NASA FMEA #: 05-6Q-2203A-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 211  
ITEM: PWR CKT-SW (CDR)

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED IN OFF, SHORT TO CASE AT ON, POLE TO POLE SHORT, (CDR). IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/15/88  
ASSESSMENT ID: D&C-212X  
NASA FMEA #: 05-6Q-2203B-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 212  
ITEM: PWR CKT-SW (PLT)

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ X ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED IN OFF, SHORT TO CASE AT ON, POLE TO POLE SHORT. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-301  
NASA FMEA #: 05-3-12102-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 301  
ITEM: G-METER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-302  
NASA FMEA #: 05-3-12102-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 302  
ITEM: G-METER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-401  
NASA FMEA #: 05-3-12110-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 401  
ITEM: AMI-ALPHA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-402  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C  
MDAC ID: 402  
ITEM: AMI-ALPHA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO LOSS OF  
VISIBILITY OF VEHICLE'S TRUE AUGHE-OF-ATTACKS REQUIRING CREW  
RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-403  
NASA FMEA #: 05-3-12110-4

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 403  
ITEM: AMI-M/VEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF MACH/VEL. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-404  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [     ]  
NEW [     ]

SUBSYSTEM: D&C  
MDAC ID: 404  
ITEM: AMI-M/VEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[   /   ]	[   ]	[   ]	[   ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]     [   ]     [   ]     [   ]     [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [     ]  
INADEQUATE [     ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO LOSS OF  
VISIBILITY OF VEHICLE'S TRUE M/VEL REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-405  
NASA FMEA #: 05-3-12110-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 405  
ITEM: AMI-ACCEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF DRAG ACCEL. IOA FAILURE MODE; NO  
OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
 ASSESSMENT ID: D&C-406  
 NASA FMEA #: NONE  
  
 SUBSYSTEM: D&C  
 MDAC ID: 406  
 ITEM: AMI-ACCEL  
  
 LEAD ANALYST: W.H. TRAHAN

NASA DATA:  
 BASELINE [    ]  
 NEW [    ]

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
 LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO LOSS OF  
 VISIBILITY OF VEHICLE'S TRUE ACCELERATION REQUIRING CREW  
 RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-407  
NASA FMEA #: 05-3-12110-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 407  
ITEM: AMI-EAS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF EAS. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-408  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C  
MDAC ID: 408  
ITEM: AMI-EAS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO LOSS OF  
VISIBILITY OF VEHICLE'S TRUE EAS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87	NASA DATA: ,
ASSESSMENT ID: D&C-409	BASELINE [   ]
NASA FMEA #: 05-6Q-2004-1	NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 409  
ITEM: AMI-ADTA SW, RESISTOR, & FUSES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[   /   ]	[   ]	[   ]	[   ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]	[   ]	[   ]	[   ]	[   ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[   ]
INADEQUATE	[   ]

## REMARKS:

NASA FAILURE MODE; OPENS, PREMATURELY OPENS. IOA FAILURE MODE;  
FAIL OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-409A  
NASA FMEA #: 05-3-12111-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 409  
ITEM: AMI-ADTA SW, RESISTOR, & FUSES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
FLIGHT HDW/FUNC		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND, CONT TO CONT. IOA  
FAILURE MODE; FAIL OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES  
WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-409B  
NASA FMEA #: 05-3-12111-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 409  
ITEM: AMI-ADTA SW, RESISTOR, & FUSES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-409C  
NASA FMEA #: 05-3-12156-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 409  
ITEM: AMI-ADTA SW, RESISTOR, & FUSES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAILED  
OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87	NASA DATA:
ASSESSMENT ID: D&C-410	BASELINE [    ]
NASA FMEA #: 05-3-12111-2	NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 410  
ITEM: AMI-ADTA SW, RESISTOR, & FUSES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY	SCREENS		CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

C-2

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-501  
NASA FMEA #: 05-3-12120-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 501  
ITEM: HSI-BEARING

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-502  
NASA FMEA #: 05-3-12120-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 502  
ITEM: HSI-BEARING

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-503  
NASA FMEA #: 05-3-12120-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 503  
ITEM: HSI-HEADING

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-504  
NASA FMEA #: 05-3-12120-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 504  
ITEM: HSI-HEADING

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-505  
NASA FMEA #: 05-3-12120-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 505  
ITEM: HSI-COURSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-506  
NASA FMEA #: 05-3-12120-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 506  
ITEM: HSI-COURSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-507  
NASA FMEA #: 05-3-12120-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 507  
ITEM: HSI-RNG

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
RANGE NOT A CRITICAL DISPLAY REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-508  
NASA FMEA #: 05-3-12120-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 508  
ITEM: HSI-RNG

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. RNG NOT CRITICAL TO FLIGHT.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-509  
NASA FMEA #: 05-3-12121-2

NASA DATA:  
BASELINE [   ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 509  
ITEM: HSI-MODE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
FLIGHT HDW/FUNC		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[   /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
FAIL OPEN. NO DIFFERENCES. AFTER ADDITIONAL ANALYSIS IOA AGREES  
WITH NASA'S CRITICALITY.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-510  
NASA FMEA #: 05-3-12121-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 510  
ITEM: HSI-MODE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-510A  
NASA FMEA #: 05-3-12121-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 510  
ITEM: HSI-MODE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-511  
NASA FMEA #: 05-3-12122-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 511  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILED OPEN, SHORT TO GROUND. IOA FAILURE MODE; FAILED OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-511A  
NASA FMEA #: 05-3-12158-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 511  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAILED  
OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-511B  
NASA FMEA #: 05-3-12159-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 511  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAILED  
OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-511C  
NASA FMEA #: 05-3-12160-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 511  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAILED  
OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-512  
NASA FMEA #: 05-3-12122-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 512  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILED CLOSED. IOA FAILURE MODE; FAILED  
CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-512A  
NASA FMEA #: 05-3-12122-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 512  
ITEM: HSI-SOURCE SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAILED CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
 ASSESSMENT ID: D&C-513  
 NASA FMEA #: 05-6Q-2006-1

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 513  
 ITEM: HSI-SOURCE SEL SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPENS, PREMATURELY OPENS. IOA FAILURE MODE;  
 FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-513A  
NASA FMEA #: 05-3-12123-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 513  
ITEM: HSI-SOURCE SEL SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN.  
AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
 ASSESSMENT ID: D&C-514  
 NASA FMEA #: 05-3-12123-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 514  
 ITEM: HSI-SOURCE SEL SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
 NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-514A  
NASA FMEA #: 05-3-12123-3

NASA DATA:  
BASELINE [ ]  
NEW [ .X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 514  
ITEM: HSI-SOURCE SEL SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL SHORT CONTACT TO CONTACT. IOA FAILURE  
MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-601  
NASA FMEA #: 05-3-12115-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 601  
ITEM: AVVI - ALT ACCEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-601A  
NASA FMEA #: 05-3-12115-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 601  
ITEM: AVVI - ALT ACCEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 10/22/87  
ASSESSMENT ID: D&C-602  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 602  
ITEM: AVVI - ALT ACCEL

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS  
OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-603  
NASA FMEA #: 05-3-12115-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 603  
ITEM: AVVI - ALT RATE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-604  
NASA FMEA #:

NASA DATA:  
BASELINE [     ]  
NEW [     ]

SUBSYSTEM: D&C  
MDAC ID: 604  
ITEM: AVVI - ALT RATE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[   /   ]	[   ]	[   ]	[   ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]     [   ]     [   ]     [   ]     [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

REMARKS:

ADEQUATE [     ]  
INADEQUATE [     ]

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-605  
NASA FMEA #: 05-3-12115-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 605  
ITEM: AVVI - ALT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-606  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 606  
ITEM: AVVI - ALT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-607  
NASA FMEA #: 05-3-12115-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 607  
ITEM: AVVI - RDR ALT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: D&C-608

NASA FMEA #:

NASA DATA:

BASELINE [ ]

NEW [ ]

SUBSYSTEM: D&C

MDAC ID: 608

ITEM: AVVI - RDR ALT

LEAD ANALYST: W.H. TRAHAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-609  
NASA FMEA #: 05-6Q-2005-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 609  
ITEM: AVVI - RDR ALT SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPENS, OPENS PREMATURELY. IOA FAILURE MODE;  
FAIL OPEN. ALT NOT CRITICAL TO FLIGHT. CRIT NOT RAISED. NO  
ACTION REQUIRED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
 ASSESSMENT ID: D&C-609A  
 NASA FMEA #: 05-3-12116-1  
 NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]  
 SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 609  
 ITEM: AVVI - RDR ALT SW, RESISTOR, & FUSE  
 LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
 FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-609B  
NASA FMEA #: 05-3-12116-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 609  
ITEM: AVVI - RDR ALT SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
FLIGHT HDW/FUNC		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:  
NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-610  
NASA FMEA #: 05-3-12116-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 610  
ITEM: AVVI - RDR ALT SW, RESISTOR, & FUSE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-701  
NASA FMEA #: 05-3-12101-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 701  
ITEM: SPI

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE; NO OUTPUT.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-702  
NASA FMEA #: 05-3-12101-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 702  
ITEM: SPI

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-703  
NASA FMEA #: 05-6Q-2003-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 703  
ITEM: SPI-PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1101  
NASA FMEA #: 05-3-12135-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1101  
ITEM: METER, EVENT TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1102  
NASA FMEA #: 05-3-12135-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1102  
ITEM: METER, EVENT TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1103  
NASA FMEA #: 05-3-12137-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1103  
ITEM: SWITCH - UP/DOWN/TEST

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, CLOSED. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1103A  
NASA FMEA #: 05-3-12137-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1103  
ITEM: SWITCH - UP/DOWN/TEST

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND, CONT TO CONT. IOA FAILURE  
MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: D&C-1104

NASA FMEA #:

NASA DATA:

BASELINE [   ]

NEW [   ]

SUBSYSTEM: D&C

MDAC ID: 1104

ITEM: CIRCUIT BREAKER

LEAD ANALYST: W.H. TRAHAN

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[   /   ]	[   ]	[   ]	[   ]	[   ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[   ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1105  
NASA FMEA #: 05-6Q-2109-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1105  
ITEM: CIRCUIT BREAKER-EVENT TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, INADVERTENTLY OPENS.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1106  
NASA FMEA #: 05-3-12136-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1106  
ITEM: SWITCH - START/STOP

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1107  
NASA FMEA #: 05-3-12138-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1107  
ITEM: SWITCH - SET/RESET

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1108  
NASA FMEA #: 05-3-12139-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1108  
ITEM: SWITCH - THUMBWHEEL - MIN/SEC

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT, OPEN OR SHORT TO GROUND.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1201  
NASA FMEA #: 05-3-12125-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1201  
ITEM: ADI-ATTITUDE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ADI FUNCTION. IOA FAILURE MODE; NO  
OUTPUT. AFTER FURTHER ANALYSIS IOA AGREE WITH NASA CRITICALITY.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1201A  
NASA FMEA #: 05-3-12155-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1201  
ITEM: ADI-ATTITUDE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]    [ P ]    [ P ]    [ P ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1202  
NASA FMEA #: 05-3-12125-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1202  
ITEM: ADI-ATTITUDE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. AFTER FURTHER ANALYSIS IOA AGREE WITH NASA CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1203  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C  
MDAC ID: 1203  
ITEM: ADI-RATES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

REMARKS:

ADEQUATE [    ]  
INADEQUATE [    ]

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1204  
NASA FMEA #:

NASA DATA:  
BASELINE [   ]  
NEW [   ]

SUBSYSTEM: D&C  
MDAC ID: 1204  
ITEM: ADI-RATES

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[   /   ]	[   ]	[   ]	[   ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ] [   ] [   ] [   ] [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1205  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1205  
ITEM: ADI-ERRORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1206  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1206  
ITEM: ADI-ERRORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1207  
NASA FMEA #: 05-3-12126-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1207  
ITEM: ADI-ERR SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
-----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE  
DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW  
RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1207A  
NASA FMEA #: 05-3-12153-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1207  
ITEM: ADI-ERR SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAIL  
OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE  
TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1208  
NASA FMEA #: 05-3-12126-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1208  
ITEM: ADI-ERR SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1208A  
NASA FMEA #: 05-3-12126-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1208  
ITEM: ADI-ERR SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1209  
NASA FMEA #: 05-3-12127-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1209  
ITEM: ADI-RATE SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1209A  
NASA FMEA #: 05-3-12127-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1209  
ITEM: ADI-RATE SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1210  
NASA FMEA #: 05-3-12127-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1210  
ITEM: ADI-RATE SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
-----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN. LOSS  
OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO LOSS OF  
VISIBILITY OF STATUS REQUIRING CREW RESPONSE.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1210A  
NASA FMEA #: 05-3-12154-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1210  
ITEM: ADI-RATE SEL SW & RESISTOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]    [ P ]    [ P ]    [ P ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAIL  
OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE TO  
LOSS OF VISIBILITY OF STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1211  
NASA FMEA #: 05-3-12128-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1211  
ITEM: ADI-MODE SEL SW

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF VEHICLE DUE  
TO LOSS OF VISIBILITY OF STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1212  
NASA FMEA #: 05-3-12128-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1212  
ITEM: ADI-MODE SEL SW

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1212A  
NASA FMEA #: 05-3-12128-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1212  
ITEM: ADI-MODE SEL SW

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1301  
NASA FMEA #: 05-3-12140-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1301  
ITEM: METER, MISSION TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS  
OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
 ASSESSMENT ID: D&C-1302  
 NASA FMEA #: 05-3-12140-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C  
 MDAC ID: 1302  
 ITEM: METER, MISSION TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT. IOA FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1303  
NASA FMEA #: 05-3-12141-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1303  
ITEM: SWITCH - GMT/MET/TEST

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED IN  
A POSITION OTHER THAN THE ONE SELECTED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1303A  
NASA FMEA #: 05-3-12141-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1303  
ITEM: SWITCH - GMT/MET/TEST

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1304  
NASA FMEA #:

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C  
MDAC ID: 1304  
ITEM: CIRCUIT BREAKER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1305  
NASA FMEA #: 05-6Q-2108-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1305  
ITEM: CIRCUIT BREAKER-MISSION TIMER

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, INADVERTENTLY OPENS.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1306  
NASA FMEA #: 05-3-12141-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1306  
ITEM: SWITCH - GMT/MET/TEST

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND, CONT TO CONT. IOA FAILURE  
MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1401  
NASA FMEA #: 05-3-12309-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ONE OF 38 CHNLS, DRV FAI. IOA FAILURE MODE; NO OUTPUT. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1401A  
NASA FMEA #: 05-3-12309-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF BACKUP OUTPUT. IOA FAILURE MODE; NO OUTPUT. ADDITIONAL ANALYSIS RESULTED IN AGREEMENT WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87 NASA DATA:  
ASSESSMENT ID: D&C-1401B BASELINE [ ]  
NASA FMEA #: 05-3-12309-3 NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF FAIL ANNUNCIATOR OUTPUT. IOA FAILURE MODE; NO OUTPUT. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1401C  
NASA FMEA #: 05-3-12309-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF MASTER ALARM OUTPUT. IOA FAILURE  
MODE; NO OUTPUT. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH  
NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1401D  
NASA FMEA #: 05-3-12309-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF AURAL TONE. IOA FAILURE MODE; NO OUTPUT. LOSS OF AURAL TONE DOSE NOT COMPROMISE THE MISSION.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1401E  
NASA FMEA #: 05-3-12309-6

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF AURAL TONE TO 8-OHM SPEAKERS. IOA  
FAILURE MODE; NO OUTPUT. NO SAFETY IMPACT IF INTERFACING  
SUBSYSTEMS OPERATING WITHIN LIMIT.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1401F  
NASA FMEA #: 05-3-12309-7

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF DISCRETE TELEMETRY OUTPUT. IOA  
FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1401G  
NASA FMEA #: 05-3-12309-8

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1401  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF POWER AND/OR SIGNAL. IOA FAILURE  
MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-1402  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1402  
ITEM: CAUTION & WARNING ELECTRONICS UNIT (CEU)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; ERRONEOUS OUTPUT.  
NOT CRITICAL FOR CREW/VEHICLE SAFETY OR MISSION COMPLETION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1403  
NASA FMEA #: 05-3-12310-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1403  
ITEM: C/W ANNUNCIATOR ASSEMBLY

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
----------	--------	--------	--------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN LAMP, ONE OF A PAIR OUT. IOA FAILURE;  
FAIL OPEN. NO SAFETY IMPACT IF INTERFACING SUBSYSTEMS ARE  
OPERATING WITHIN LIMITS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:

ASSESSMENT ID: D&C-1404

NASA FMEA #:

NASA DATA:

BASELINE [ ]

NEW [ ]

SUBSYSTEM: D&C

MDAC ID: 1404

ITEM: C/W STATUS DISPLAY

LEAD ANALYST: E.E. PRUST

ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

IOA FAILURE MODE; LOSS OF OUTPUT. NOT CRITICAL FOR CREW/VEHICLE  
SAFETY OR MISSION COMPLETION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1405  
NASA FMEA #: 05-3-12313-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1405  
ITEM: C/W STATUS DISPLAY

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS  
OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1406  
NASA FMEA #: 05-3-12312-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1406  
ITEM: C/W ANNUNCIATOR MEMORY (READ/ctr/CLEAR)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1407  
NASA FMEA #: 05-3-12312-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1407  
ITEM: C/W ANNUNCIATOR MEMORY (READ/ctr/CLEAR)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
INADVERTENT OPERATIONS. NO DIFFERENCES.. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87 NASA DATA:  
ASSESSMENT ID: D&C-1408 BASELINE [ ]  
NASA FMEA #: 05-3-12312-1 NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1408  
ITEM: C/W ANNUNCIATOR MEMORY (READ/ctr/CLEAR)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
INADVERTENT OPERATIONS. NO DIFFERENCES.. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1409  
NASA FMEA #: 05-3-12311-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1409  
ITEM: C/W ANNUNCIATOR LAMP TEST (LEFT/ctr/RIGHT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87	NASA DATA:
ASSESSMENT ID: D&C-1409A	BASELINE [    ]
NASA FMEA #: 05-3-12311-3	NEW [ X ]
SUBSYSTEM: D&C	
MDAC ID: 1409	
ITEM: C/W ANNUNCIATOR LAMP TEST (LEFT/ctr/RIGHT)	
LEAD ANALYST: E.E. PRUST	

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

## RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] (ADD/DELETE)
----------	--------	--------	--------	------------------------

## \* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE; FAIL OPEN. NO SAFETY IMPACT IF OPERATING SUBSYSTEMS ARE OPERATING WITHIN LIMITS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1410  
NASA FMEA #: 05-3-12311-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1410  
ITEM: C/W ANNUNCIATOR LAMP TEST (LEFT/ctr/RIGHT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE; FAIL CLOSED. NO  
SAFETY IMPACT IF OPERATING SUBSYSTEMS ARE OPERATING WITHIN  
LIMITS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1410A  
 NASA FMEA #: 05-3-12311-3  
 NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]  
 SUBSYSTEM: D&C  
 MDAC ID: 1410  
 ITEM: C/W ANNUNCIATOR LAMP TEST (LEFT/ctr/RIGHT)  
 LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CONTACT TO CONTACT SHORT. IOA FAILURE;  
 FAIL CLOSED. NO SAFETY IMPACT IF OPERATING SUBSYSTEMS ARE  
 OPERATING WITHIN LIMITS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1411  
NASA FMEA #: 05-3-12332-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1411  
ITEM: ANNUNCIATOR INTENSITY (VAR/BRT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODES; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1412  
 NASA FMEA #: 05-3-12332-1

NASA DATA: ,  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: D&C  
 MDAC ID: 1412  
 ITEM: ANNUNCIATOR INTENSITY (VAR/BRT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODES; FAIL TO SWITCH. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1412  
NASA FMEA #: 05-3-12332-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1413  
ITEM: ANNUNCIATOR INTENSITY KNOB

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODES; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1413  
NASA FMEA #: 05-3-12332-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1414  
ITEM: ANNUNCIATOR INTENSITY KNOB

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODES; FAILED  
MID-TRAVEL. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1415  
NASA FMEA #: 05-3-12312-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1415  
ITEM: C/W STATUS DISPLAY MEMORY (READ/ctr/CLEAR)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1416  
 NASA FMEA #: 05-3-12312-1  
 SUBSYSTEM: D&C  
 MDAC ID: 1416  
 ITEM: C/W STATUS DISPLAY MEMORY (READ/ctr/CLEAR)  
 LEAD ANALYST: E.E. PRUST

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
 INADVERTENT OPERATIONS. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1417  
NASA FMEA #: 05-3-12312-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1417  
ITEM: C/W STATUS DISPLAY MEMORY (READ/ctr/CLEAR)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
INADVERTENT OPERATIONS. NO DIFFERENCES.

C-3

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1418  
 NASA FMEA #: 05-3-12319-1  
 SUBSYSTEM: D&C  
 MDAC ID: 1418  
 ITEM: C/W STATUS DISPLAY LAMP TEST (LEFT/ctr/RIGHT)  
 LEAD ANALYST: E.E. PRUST

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1419  
NASA FMEA #: 05-3-12319-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1419  
ITEM: C/W STATUS DISPLAY LAMP TEST (LEFT/ctr/RIGHT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
INADVERTENT OPERATION. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1420  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [    ]  
NEW [    ]

SUBSYSTEM: D&C  
MDAC ID: 1420  
ITEM: C/W MODE (ACK/NORM/ASC)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[    /    ]	[    ]	[    ]	[    ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; OPEN CIRCUIT. NO  
SAFETY IMPACT ON CREW/VEHICLE OR MISSION COMPLETION.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1421  
NASA FMEA #: 05-3-12316-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1421  
ITEM: C/W MODE (ACK/NORM/ASC)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAILED CLOSED IN ONE POSITION. IOA FAILURE  
MODE; FAILED TO SWITCH. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1421A  
NASA FMEA #: 05-3-12316-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1421  
ITEM: C/W MODE (ACK/NORM/ASC)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO CASE. IOA FAILURE MODE; FAILED TO SWITCH. NO SAFETY IMPACT IF INTERFACING SUBSYSTEMS ARE OPERATING WITHIN LIMITS.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1422  
NASA FMEA #: 05-3-12314-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1422  
ITEM: C/W PARAMETER SELECT

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT, NO OUTPUT, SHT TO GND. IOA  
FAILURE MODE; FAILS TO SWITCH. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1423  
NASA FMEA #: 05-3-12307-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1423  
ITEM: C/W LIMIT SET FUNCTION (SET/ctr/READ)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN, CLOSED, CONT TO CONT SHT TO GND.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1424  
NASA FMEA #: 05-3-12308-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1424  
ITEM: C/W LIMIT SET LIMIT (UPPER/LOWER)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN, CLOSED, CONT TO CONT SHT TO GND.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1425  
NASA FMEA #: 05-3-12306-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1425  
ITEM: C/W LIMIT SET VALUE

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, ERR OUTPUT, SHT TO GND. IOA  
FAILURE MODE; NO OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1426  
NASA FMEA #: 05-3-12317-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1426  
ITEM: C/W PARAMETER STATUS (TRIPPED/ctr/INHIBITED)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1427  
 NASA FMEA #: 05-3-12317-1  
 NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]  
 SUBSYSTEM: D&C  
 MDAC ID: 1427  
 ITEM: C/W PARAMETER STATUS (TRIPPED/ctr/INHIBITED)  
 LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

## RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

## \* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
 INADVERTENT OPERATION. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1428  
NASA FMEA #: 05-3-12318-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1428  
ITEM: C/W PARAMETER (ENABLE/ctr/INHIBIT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1429  
NASA FMEA #: 05-3-12318-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1429  
ITEM: C/W PARAMETER (ENABLE/ctr/INHIBIT)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE;  
INADVERTENT OPERATION. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1430  
NASA FMEA #: 05-3-12333-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1430  
ITEM: C/W TONE VOLUME A (B)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1431  
NASA FMEA #: 05-3-12333-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1431  
ITEM: C/W TONE VOLUME A (B)

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAIL  
MID-TRAVEL. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1432  
NASA FMEA #: 05-3-12305-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1432  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, SHORT TO GROUND. IOA FAILURE MODE; FAIL  
OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1432A  
NASA FMEA #: 05-3-12305-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1432  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN.  
AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1433  
NASA FMEA #: 05-3-12305-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1433  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NORMAL MODE OF OPERATION IS IN THE CLOSED POSITION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1433A  
NASA FMEA #: 05-3-12305-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1433  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; PREMATURE CLOSE. IOA FAILURE MODE; FAIL  
CLOSED. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1433B  
NASA FMEA #: 05-3-12305-5

NASA DATA:  
BASELINE [   ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1433  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[   ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[   ]
COMPARE	[   /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]      [ NA]    [ NA]    [ NA]      [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

## REMARKS:

NASA FAILURE MODE; CONTACT TO CONTACT SHORT. IOA FAILURE MODE;  
FAIL CLOSED. SWITCH NORMALLY IN CLOSE POSITION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-1434  
NASA FMEA #: 05-3-12305-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1434  
ITEM: MASTER ALARM

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN. IOA FAILURE MODE; FAILS TO CLOSE.  
AFTER ADDITIONAL ANALYSIS, IOA AGREES WITH NASA CRITICALITY.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1435  
NASA FMEA #: 05-6Q-2112-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1435  
ITEM: C/W A, C/W B

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, FAIL TO CONDUCT. IOA  
FAILURE MODE; FAIL OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES  
WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-1436  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1436  
ITEM: C/W A, C/W B, PWR CKT

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; FAIL TO OPEN CIRCUIT.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/19/88  
ASSESSMENT ID: D&C-1437  
NASA FMEA #: NONE

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1437  
ITEM: C/W LIMIT MODULE

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NONE. IOA FAILURE MODE; LOSS OF OUTPUT. LOSS  
OF PARAMETER ALUES HAVE NO SAFETY IMPACT ON MISSION OR  
CREW/VEHICLE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1438  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1438  
ITEM: C/W LIMIT MODULE

LEAD ANALYST: E.E. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ / ]	[ ]	[ ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/13/88  
ASSESSMENT ID: D&C-1439X  
NASA FMEA #: 05-3-12309-9

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1439  
ITEM: CEU-PWR SUPPLY

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ] *
IOA	[ 2 /1R ]	[ P ]	[ P ]	[ P ]	[ X ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ONE OF TWO POWER SUPPLY. IOA FAILURE  
MODE; LOSS OF POWER SUPPLY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601  
NASA FMEA #: 05-3-12367-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601A  
NASA FMEA #: 05-3-12368-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601B  
NASA FMEA #: 05-3-12379-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601C  
NASA FMEA #: 05-3-12384-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601D  
NASA FMEA #: 05-3-12385-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601E  
NASA FMEA #: 05-3-12386-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
FLIGHT HDW/FUNC		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601F  
NASA FMEA #: 05-3-12372-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1601G  
NASA FMEA #: 05-3-12375-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1601  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1602  
NASA FMEA #: 05-6Q-2111-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, FAIL TO CONDUCT. IOA  
FAILURE MODE; FAIL OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1602A  
NASA FMEA #: 05-6Q-2601-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ /N ]	[ ]	[ ]	[ N ]	[ ]

## RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
				(ADD/DELETE)

## \* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, FAIL TO CONDUCT. IOA FAILURE MODE;  
FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE  
DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW  
RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1602B  
NASA FMEA #: 05-6Q-2601-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS  
OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1602C  
NASA FMEA #: 05-6Q-2602-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA FAILURE MODE; FAIL OPEN, SHORT TO GROUND, FAIL TO CONDUCT.  
IOA FAILURE MODE; FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE  
LOSS OF CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS  
REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1602D  
NASA FMEA #: 05-3-12304-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ /N ]	[ ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-1602E  
NASA FMEA #: 05-3-12331-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILED OPEN. IOA FAILURE MODE; FAILED OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602F  
NASA FMEA #: 05-3-12331-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAILED OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602G  
NASA FMEA #: 05-3-12331-7

NASA DATA:  
BASELINE [   ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[   ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[   ]	[   ]
COMPARE	[   /N ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[   ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

REMARKS:  
NASA FAILURE MODE; FAIL OPEN PREMATURELY. IOA FAILURE MODE;  
FAILED OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF  
CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS  
REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602H  
NASA FMEA #: 05-3-12345-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF A PAIR OUT. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602I  
NASA FMEA #: 05-3-12360-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

## REMARKS:

NASA FAILURE MODE; FAILED OPEN. IOA FAILURE MODE; FAILED OPEN.  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS  
OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602J  
NASA FMEA #: 05-3-12365-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602K  
NASA FMEA #: 05-3-12360-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]      [ P ]      [ P ]      [ P ]      [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORTS. IOA FAILURE MODE; FAILED OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS OF VISIBILITY OF VEHICLE STATUS REQUIRING CREW RESPONSE.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-1602L  
 NASA FMEA #: 05-3-12390-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 1602  
 ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
 MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1602M  
NASA FMEA #: 05-3-12390-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1602  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1603  
NASA FMEA #: 05-6Q-2601-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSE, POLE TO POLE, CONTACT TO CONTACT.  
IOA FAILURE MODE; FAIL CLOSE. CIRCUIT NORMALLY CLOSED DURING  
FLIGHT.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1603A  
NASA FMEA #: 05-6Q-2602-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, POLE TO POLE, CONTACT TO CONTACT.  
IOA FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1603B  
NASA FMEA #: 05-3-12331-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT POLE TO POLE. IOA FAILURE MODE; FAILED  
CLOSED. CKT NORMALLY CLOSED.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1603C  
NASA FMEA #: 05-3-12331-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ ]
INADEQUATE	[ ]

## REMARKS:

NASA FAILURE MODE; SHORT CONTACT TO CONTACT. IOA FAILURE MODE;  
FAILED CLOSED. CKT NORMALLY CLOSED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1603D  
NASA FMEA #: 05-3-12331-5

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILED CLOSED. IOA FAILURE MODE; FAILED  
CLOSED. CKT NORMALLY CLOSED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1603E  
NASA FMEA #: 05-3-12331-6

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1603  
ITEM: ACA PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ] [ NA] [ NA] [ NA] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAILED CLOSED PREMATURELY. IOA FAILURE MODE;  
FAILED CLOSED. CKT NORMALLY CLOSED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604  
NASA FMEA #: 05-3-12335-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF A PAIR OUT. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604A  
NASA FMEA #: 05-3-12340-1

NASA DATA:  
BASELINE [   ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[   ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[   ]	[   ]
COMPARE	[   /   ]	[ N ]	[ N ]	[ N ]	[   ]

RECOMMENDATIONS: (If different from NASA)

[   /   ]   [   ]   [   ]   [   ]   [   ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [   ]  
INADEQUATE [   ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF A PAIR OUT. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604B  
NASA FMEA #: 05-3-12350-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILED ANNUNCIATOR. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604C  
NASA FMEA #: 05-3-12362-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN LIGHT BULB, ONE OF PAIR OUT. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604D  
NASA FMEA #: 05-3-12364-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604E  
NASA FMEA #: 05-3-12366-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604F  
NASA FMEA #: 05-3-12369-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604G  
NASA FMEA #: 05-3-12370-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604H  
NASA FMEA #: 05-3-12371-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604I  
NASA FMEA #: 05-3-12373-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604J  
NASA FMEA #: 05-3-12374-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604K  
NASA FMEA #: 05-3-12376-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604L  
NASA FMEA #: 05-3-12377-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604M  
NASA FMEA #: 05-3-12378-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604N  
NASA FMEA #: 05-3-12380-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-16040  
NASA FMEA #: 05-3-12381-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:  
NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604P  
NASA FMEA #: 05-3-12382-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604Q  
NASA FMEA #: 05-3-12383-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604R  
NASA FMEA #: 05-3-12385-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604S  
NASA FMEA #: 05-3-12387-1

NASA DATA: ,  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604T  
NASA FMEA #: 05-3-12388-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604U  
NASA FMEA #: 05-3-12389-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL ITEM
FLIGHT HDW/FUNC		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604V  
NASA FMEA #: 05-3-12391-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604W  
NASA FMEA #: 05-3-12392-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604X  
NASA FMEA #: 05-3-12393-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[    ]	[    ]
COMPARE	[    /    ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO OUTPUT, OPEN, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1604Y  
NASA FMEA #: 05-3-12394-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604  
ITEM: ACA PWR CKT-EVENT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ P ]	[ P ]	[ ]	[ ]
COMPARE	[ / ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN BULB, ONE OF PAIR OUT. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 1/13/88  
ASSESSMENT ID: D&C-1605X  
NASA FMEA #: 05-3-12376-TBD

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1605  
ITEM: ACA

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS OUTPUT. IOA FAILURE MODE; ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1701  
NASA FMEA #: 05-6Q-2102-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1701  
ITEM: CIRCUIT BREAKER-PQI

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL
FLIGHT					ITEM
HDW/FUNC		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPENS, FAILS OPENS, INADVERTENTLY OPENS. IOA  
FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
 ASSESSMENT ID: D&C-1702  
 NASA FMEA #: 05-3-12103-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C  
 MDAC ID: 1702  
 ITEM: SWITCH ROTARY, RCS/OMS PROPELLANT QUANTITY GAUGE

LEAD ANALYST: V.J. BURKEMPER

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF DISPLAY. IOA FAILURE MODE; NO OUTPUT.  
 NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1703  
NASA FMEA #: 05-3-12103-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1703  
ITEM: METER, RCS/OMS PROPELLANT QUANTITY GAUGE

LEAD ANALYST: V.J. BURKEMPER

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS DISPLAY. IOA FAILURE MODE;  
ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87 NASA DATA: ,  
ASSESSMENT ID: D&C-1703A BASELINE [ ]  
NASA FMEA #: 05-3-12103-3 NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1703  
ITEM: METER, RCS/OMS PROPELLANT QUANTITY GAUGE

LEAD ANALYST: V.J. BURKEMPER

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS DISPLAY. IOA FAILURE MODE;  
ERRONEOUS OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1704  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1704  
ITEM: TOTALIZER

LEAD ANALYST: C.D. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE:  
ASSESSMENT ID: D&C-1705  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1705  
ITEM: TOTALIZER

LEAD ANALYST: C.D. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ N / N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: ,  
ASSESSMENT ID: D&C-1706  
NASA FMEA #:

NASA DATA:  
BASELINE [ ]  
NEW [ ]

SUBSYSTEM: D&C  
MDAC ID: 1706  
ITEM: TOTALIZER

LEAD ANALYST: C.D. PRUST

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ / ]	[ ]	[ ]	[ ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ N /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

REMARKS:

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1801  
NASA FMEA #: 05-6Q-2402-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL MODES. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801A  
NASA FMEA #: 05-3-12402-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, DIM CAP, INSUF LIGHT. IOA  
FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801B  
NASA FMEA #: 05-3-12407-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO ILLUMINATION, INSUFF ILLUM. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801C  
NASA FMEA #: 05-3-12410-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY		REDUNDANCY SCREENS			CIL
FLIGHT					ITEM
HDW/FUNC		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; NO ILLUMINATION, INSUFF ILLUM, NO DIM CAP.  
IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801D  
NASA FMEA #: 05-3-12413-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, INSUFF ILLUM. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801E  
NASA FMEA #: 05-3-12414-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, INSUFF ILLUM. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801F  
NASA FMEA #: 05-3-12415-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, PWR, SHT TO GND. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801G  
NASA FMEA #: 05-3-12416-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, INSUF ILLUM. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801H  
NASA FMEA #: 05-3-12506-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, NO LIGHT OUTPUT. IOA FAILURE  
MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1801I  
NASA FMEA #: 05-3-12701-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1801  
ITEM: ILLUMINATION-FLD LTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[ ]
INADEQUATE	[ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, NO LIGHT OUTPUT. IOA FAILURE MODE; LOSS OF OUTPUT. IOA FAILURE MODE DOES NOT RAISE THE CRITICALITY OF THE COMPONENT. NO ACTION REQUIRED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1802  
NASA FMEA #: 05-3-12404-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1802  
ITEM: ILLUMINATION-POT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	A	B	C	CIL ITEM
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, DIM CAP, INSUF LIGHT. IOA  
FAILURE MODE; FAILED OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1802A  
NASA FMEA #: 05-3-12404-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1802  
ITEM: ILLUMINATION-POT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ] (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHT TO GDN, NO DIM CAP. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1802B  
NASA FMEA #: 05-3-12411-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1802  
ITEM: ILLUMINATION-POT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1802C  
NASA FMEA #: 05-3-12411-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1802  
ITEM: ILLUMINATION-POT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; WIPER SHORT TO GND. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1803  
NASA FMEA #: 05-3-12363-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1803  
ITEM: ILLUMINATION CONTROL CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1803A  
NASA FMEA #: 05-3-12501-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1803  
ITEM: ILLUMINATION CONTROL CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-1803B  
NASA FMEA #: 05-3-12503-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1803  
ITEM: ILLUMINATION CONTROL CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OPEN, SHORT TO GROUND. IOA FAILURE MODE;  
FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-1804  
NASA FMEA #: 05-3-12705-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1804  
ITEM: ILLUMINATION-SPOTLIGHTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, NO LIGHT OUTPUT. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-1804A  
NASA FMEA #: 05-3-12709-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1804  
ITEM: ILLUMINATION-SPOTLIGHTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF ILLUM, NO LIGHT OUTPUT. IOA FAILURE  
MODE; LOSS OF OUTPUT. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-1804B  
NASA FMEA #: 05-3-12804-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1804  
ITEM: ILLUMINATION-SPOTLIGHTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ] (ADD/DELETE)
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\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; LOSS OF OUTPUT. LOSS OF ILLUMINATION FOR NIGHT OPERATION MAY CAUSE LOSS OF MISSION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-1804C  
NASA FMEA #: 05-3-12804-5

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1804  
ITEM: ILLUMINATION-SPOTLIGHTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ] [ P ] [ P ] [ P ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; LOSS OF OUTPUT. LOSS OF ILLUMINATION FOR NIGHT OPERATION MAY CAUSE LOSS OF MISSION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/18/87  
ASSESSMENT ID: D&C-1804D  
NASA FMEA #: 05-3-12805-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1804  
ITEM: ILLUMINATION-SPOTLIGHTS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /2R ]	[ P ]	[ P ]	[ P ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; LOSS OF OUTPUT. LOSS OF ILLUMINATION FOR NIGHT OPERATION MAY CAUSE LOSS OF MISSION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810  
NASA FMEA #: 05-6Q-2104-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, INADVERTENTLY OPENS.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810A  
NASA FMEA #: 05-6Q-2105-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810AA  
NASA FMEA.#: 05-6Q-2303-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ ]	[ ]	[ ]	[ ]

## RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
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(ADD/DELETE)

## \* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; RPC NO OUTPUT, SHORT TO GROUND. IOA FAILURE  
MODE; FAIL OPEN. NOT CRITICAL FOR FLIGHT.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
 ASSESSMENT ID: D&C-1810B  
 NASA FMEA #: 05-6Q-2106-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 1810  
 ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN. IOA FAILURE MODE; FAIL  
 OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
 ASSESSMENT ID: D&C-1810BB  
 NASA FMEA #: 05-6Q-2304-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 1810  
 ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; RPC LOSS OF OUTPUT, SHORT TO GROUND. IOA  
 FAILURE MODE; FAIL OPEN. NOT CRITICAL FOR FLIGHT.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810C  
NASA FMEA #: 05-6Q-2107-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ] [    ] [    ] [    ] [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, INADVERTENTLY OPENS.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810CC  
NASA FMEA #: 05-6Q-2305-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ]	[ ]	[ ]	[ ]	[ ]
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(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810D  
NASA FMEA #: 05-6Q-2110-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, OPEN, INADVERTENTLY OPENS.  
IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810DD  
NASA FMEA #: 05-6Q-2306-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [ OH ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; LOSS OF OUTPUT, SHORT TO GROUND. IOA FAILURE  
MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810E  
NASA FMEA #: 05-6Q-2204-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810EE  
NASA FMEA #: 05-6Q-2501-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL MODES. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810F  
NASA FMEA #: 05-6Q-2204-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810FF  
NASA FMEA #: 05-6Q-2502-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, SHORT. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810GG  
NASA FMEA #: 05-6Q-2503-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, SHORT. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810H  
NASA FMEA #: 05-6Q-2205-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, OPEN, CONT TO CONT. IOA FAILURE  
MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810HH  
NASA FMEA #: 05-6Q-2504-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL MODES. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810I  
NASA FMEA #: 05-6Q-2205-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1810II  
NASA FMEA #: 05-6Q-2506-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL MODES. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1810JJ  
NASA FMEA #: 05-6Q-2603-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, FAIL TO CONDUCT SHORT TO GND. IOA  
FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810K  
NASA FMEA #: 05-6Q-2206-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810L  
NASA FMEA #: 05-6Q-2207-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, POLE TO POLE SHORT. IOA FAILURE  
MODE; FAIL OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810M  
NASA FMEA #: 05-6Q-2207-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810N  
NASA FMEA #: 05-6Q-2208-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN, POLE TO POLE SHORT. IOA FAILURE  
MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-18100  
NASA FMEA #: 05-6Q-2208-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810P  
NASA FMEA #: 05-6Q-2209-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE, FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810Q  
NASA FMEA #: 05-6Q-2209-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORTS TO GROUND. IOA FAILURE MODE; FAILS OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810R  
NASA FMEA #: 05-6Q-2210-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810S  
NASA FMEA #: 05-6Q-2210-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810T  
NASA FMEA #: 05-6Q-2211-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810U  
NASA FMEA #: 05-6Q-2211-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810V  
NASA FMEA #: 05-6Q-2212-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810W  
NASA FMEA #: 05-6Q-2212-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810Y  
NASA FMEA #: 05-6Q-2215-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAILS OPEN. IOA FAILURE MODE; FAILS OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1810Z  
NASA FMEA #: 05-6Q-2215-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1810  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAILS  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811  
NASA FMEA #: 05-6Q-2204-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION-PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED CONTACT TO CONTACT. IOA FAILURE  
MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811A  
NASA FMEA #: 05-6Q-2206-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL TO TRANSFER OPEN, CLOSE, CNT TO CNT. IOA  
FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811B  
NASA FMEA #: 05-6Q-2207-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, CONTACT TO CONTACT SHORT. IOA  
FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811C  
NASA FMEA #: 05-6Q-2208-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, CONTACT TO CONTACT SHORT. IOA  
FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
 ASSESSMENT ID: D&C-1811D  
 NASA FMEA #: 05-6Q-2209-3

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 1811  
 ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; SHORTS POLE TO POLE, CLOSED, CONTACT TO  
 CONTACT. IOA FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811E  
NASA FMEA #: 05-6Q-2210-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, CONTACT TO CONTACT SHORT. IOA  
FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811F  
NASA FMEA #: 05-6Q-2211-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, CONTACT TO CONTACT INADVERTENT  
OPEN OR CLOSED. IOA FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811G  
NASA FMEA #: 05-6Q-2212-3

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, CONTACT TO CONTACT SHORT. IOA  
FAILURE MODE; FAILED CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811H  
NASA FMEA #: 05-6Q-2215-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT POLE TO POLE, CLOSED, CONTACT TO CONTACT. IOA FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811I  
NASA FMEA #: 05-6Q-2303-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811J  
NASA FMEA #: 05-6Q-2304-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1811K  
NASA FMEA #: 05-6Q-2305-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, NO OUTPUT. IOA FAILURE MODE;  
FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
 ASSESSMENT ID: D&C-1811L  
 NASA FMEA #: 05-6Q-2306-2

NASA DATA:  
 BASELINE [ ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 1811  
 ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
 INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED. IOA FAILURE MODE; FAIL CLOSED.  
 NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/13/87  
ASSESSMENT ID: D&C-1811M  
NASA FMEA #: 05-6Q-2603-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1811  
ITEM: ILLUMINATION

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED, POLE TO POLE, CONT TO CONT. IOA  
FAILURE MODE; FAIL CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1901  
NASA FMEA #: 05-6Q-2101-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1901  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPENS, FAIL OPEN, INADVERTENTLY OPENS. IOA  
FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1901A  
NASA FMEA #: 05-6Q-2202-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1901  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL TO TRANSFER. IOA FAILURE MODE; FAIL  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1901B  
NASA FMEA #: 05-6Q-2202-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1901  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1901C  
NASA FMEA #: 05-6Q-2213-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1901  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL OPEN. IOA FAILURE MODE; FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1901D  
NASA FMEA #: 05-6Q-2213-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1901  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORT TO GROUND. IOA FAILURE MODE; FAIL OPEN.  
NO DIFFERENCES.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-1902  
NASA FMEA #: 05-6Q-2213-3

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 1902  
ITEM: INSTRUMENT PWR CKT

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ N ]	[ N ]	[ N ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; SHORTS-POLE TO POLE. IOA FAILURE MODE; FAIL  
CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-2001  
NASA FMEA #: 05-3-12175-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2001  
ITEM: MEASUREMENT ISOLATION RESISTORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

CRITICALITY FLIGHT HDW/FUNC		REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPEN, ELEMENT OPEN. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-2001A  
NASA FMEA #: 05-3-12356-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2001  
ITEM: MEASUREMENT ISOLATION RESISTORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-2001B  
NASA FMEA #: 05-3-12357-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2001  
ITEM: MEASUREMENT ISOLATION RESISTORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
ASSESSMENT ID: D&C-2001C  
NASA FMEA #: 05-3-12358-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2001  
ITEM: MEASUREMENT ISOLATION RESISTORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; ALL CREDIBLE MODES. IOA FAILURE MODE; FAILED  
OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/17/87  
 ASSESSMENT ID: D&C-2001D  
 NASA FMEA #: 05-3-12361-1

NASA DATA:  
 BASELINE [    ]  
 NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
 MDAC ID: 2001  
 ITEM: MEASUREMENT ISOLATION RESISTORS

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
 (ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
 INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPEN. IOA FAILURE MODE; FAILED OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2201  
NASA FMEA #: 05-6Q-2002-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2201  
ITEM: FUSE - MPS INDICATOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ NA]	[ NA]	[ NA]	[    ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
COMPARE	[    /N ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPENS, FAILS OPEN, PREMATURELY OPENS. IOA  
FAILURE MODE; FAIL OPEN. IOA'S FAILURE MODE DOES NOT RAISE THE  
CRITICALITY OF THE ITEM. NO ACTION REQUIRED.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2202  
NASA FMEA #: 05-6Q-2007-1

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2202  
ITEM: FUSE - APU & HYD INDICATOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
				(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; OPENS, PREMATURELY OPENS. IOA FAILURE MODE;  
FAIL OPEN. MONITORING FUEL NOT CRITICAL TO FLIGHT. NO ACTION  
REQUIRED.



# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2203  
NASA FMEA #: 05-6Q-2008-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C/EPD&C  
MDAC ID: 2203  
ITEM: FUSE - C&W BACKUP TONE

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; OPENS, PREMATURELY OPENS. IOA FAILURE MODE;  
FAIL OPEN. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-2301  
NASA FMEA #: 05-3-12150-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2301  
ITEM: CROSS POINTER INDICATOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /2R ]	[ NA]	[ NA]	[ NA]	[ ] *
IOA	[ 3 /3 ]	[ NA]	[ NA]	[ NA]	[ ]
COMPARE	[ /N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; NO INDICATION. IOA FAILURE MODE; NO OUTPUT.  
AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S CRITICALITY. NO  
DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/14/87  
ASSESSMENT ID: D&C-2302  
NASA FMEA #: 05-3-12150-2

NASA DATA:  
BASELINE [    ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2302  
ITEM: CROSS POINTER INDICATOR

LEAD ANALYST: W.H. TRAHAN

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /    ]	[    ]	[    ]	[    ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]    [    ]    [    ]    [    ]    [    ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [    ]  
INADEQUATE [    ]

## REMARKS:

NASA FAILURE MODE; ERRONEOUS INDICATION. IOA FAILURE MODE;  
ERRONEOUS OUTPUT. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH  
NASA'S CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87	NASA DATA:
ASSESSMENT ID: D&C-2401	BASELINE [    ]
NASA FMEA #: 05-6Q-2203-3	NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2401  
ITEM: CIRCUIT-FLT CNTLR PWR

LEAD ANALYST: R. O'DONNELL

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[    ] *
IOA	[ 3 /3 ]	[ NA ]	[ NA ]	[ NA ]	[    ]
COMPARE	[    /N ]	[ N ]	[ N ]	[ N ]	[    ]

RECOMMENDATIONS: (If different from NASA)

[    /    ]	[    ]	[    ]	[    ]	[    ]	[    ]	(ADD/DELETE)
-------------	--------	--------	--------	--------	--------	--------------

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE	[    ]
INADEQUATE	[    ]

## REMARKS:

NASA FAILURE MODE; FAIL SHORTS POLE TO POLE. IOA FAILURE MODE;  
FAIL CLOSED. AFTER ADDITIONAL ANALYSIS IOA AGREES WITH NASA'S  
CRITICALITY. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2401A  
NASA FMEA #: 05-6Q-2203-2

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2401  
ITEM: CIRCUIT-FLT CNTLR PWR

LEAD ANALYST: R. O'DONNELL

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ] *
IOA	[ 3 / 3 ]	[ NA ]	[ NA ]	[ NA ]	[ ]
COMPARE	[ / ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ / ] [ ] [ ] [ ] [ ]  
(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED IN ON POS. IOA FAILURE MODE; FAIL  
CLOSED. NO DIFFERENCES.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2402  
NASA FMEA #: 05-6Q-2203-4

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2402  
ITEM: CIRCUIT-FLT CNTLR PWR

LEAD ANALYST: R. O'DONNELL

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /2 ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ ]	[ ]	[ ]	[ ]

## RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
				(ADD/DELETE)

## \* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED IN OFF POS. IOA FAILURE MODE;  
FAIL CLOSED. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF  
CREW/VEHICLE DUE TO INABILITY TO RESPOND TO VEHICLE STATUS  
REQUIRING CREW ACTION.

# APPENDIX C ASSESSMENT WORKSHEET

ASSESSMENT DATE: 8/12/87  
ASSESSMENT ID: D&C-2402A  
NASA FMEA #: 05-6Q-2203-1

NASA DATA:  
BASELINE [ ]  
NEW [ X ]

SUBSYSTEM: D&C  
MDAC ID: 2402  
ITEM: CIRCUIT-FLT CNTLR PWR

LEAD ANALYST: R. O'DONNELL

## ASSESSMENT:

	CRITICALITY FLIGHT HDW/FUNC	REDUNDANCY SCREENS			CIL ITEM
		A	B	C	
NASA	[ 2 /2 ]	[ P ]	[ P ]	[ P ]	[ ] *
IOA	[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
COMPARE	[ N /N ]	[ ]	[ ]	[ ]	[ ]

RECOMMENDATIONS: (If different from NASA)

[ 3 /1R ]	[ P ]	[ P ]	[ P ]	[ ]
-----------	-------	-------	-------	-----

(ADD/DELETE)

\* CIL RETENTION RATIONALE: (If applicable)

ADEQUATE [ ]  
INADEQUATE [ ]

## REMARKS:

NASA FAILURE MODE; FAIL CLOSED IN OFF POS. IOA FAILURE MODE;  
FAIL OPEN. LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF  
CREW/VEHICLE.





APPENDIX D

CRITICAL ITEMS

**APPENDIX D**  
**CRITICAL ITEMS**

NASA FMEA	IOA ID	ITEM NAME	FAILURE MODE
05-3-12130-1	201	DDU	LOSS OF SIGNAL
05-3-12130-2	202	DDU	ERRONEOUS SIGNAL
05-3-12200A-1	205	DDU (CDR)	LOSS OF POWER
05-3-12200A-2	206	DDU (CDR)	ERRONEOUS PWR OUTPUT
05-3-12200B-1	207	DDU (PLT)	LOSS OF POWER
05-3-12200B-2	208	DDU (PLT)	ERRONEOUS PWR OUTPUT
05-6Q-2103A-1	209	DDU (CDR) CB	FAIL OPEN
05-6Q-2103B-1	210	DDU (PLT) CB	FAIL OPEN
05-6Q-2203A-1	211	DDU (CDR) SW	FAIL OPEN
05-6Q-2203B-1	212	DDU (PLT) SW	FAIL OPPEN
05-3-12125-1	1201	ADI	LOSS OF OUTPUT
05-3-12125-2	1202	ADI	ERRONEOUS OUTPUT
05-3-12601-1	102	HUD	LOSS OF OUTPUT
05-3-12601-2	101	HUD	ERRONEOUS OUTPUT
05-3-12602-1	104	HUD PDU	LOSS OF OUTPUT
05-3-12602-2	103	HUD PDU	ERRONEOUS OUTPUT
05-6Q-2214-1	107	HUD PWR SW	FAIL OPEN
05-6Q-2307-1	110	HUD RPC	FAIL OFF (OPEN)
05-6Q-2505-1	106	HUD RESISTOR	FAIL OPEN
05-3-12309-9	1439	C & W	LOSS OF OUTPUT
05-6Q-2112-1	1435	C & W CB	FAIL OPEN

## APPENDIX E

### DETAILED ANALYSIS

This appendix contains the IOA analysis worksheets supplementing previous results reported in STSEOS Working Paper 1.0-WP-VA87001-06, Analysis of the Displays and Controls Subsystem FMEA/CIL (01 December 1987). Prior results were obtained independently and documented before starting the FMEA/CIL assessment activity. Supplemental analysis was performed to address failure modes not previously considered by the IOA. Each sheet identifies the hardware item being analyzed, parent assembly and function performed. For each failure mode possible causes are identified, and hardware and functional criticality for each mission phase are determined as described in NSTS 22206, Instructions for Preparation of FMEA and CIL, 10 October 1986. Failure mode effects are described at the bottom of each sheet and worst case criticality is identified at the top.

#### LEGEND FOR IOA ANALYSIS WORKSHEETS

-----

##### Hardware Criticalities:

- 1 = Loss of life or vehicle
- 2 = Loss of mission or next failure of any redundant item (like or unlike) could cause loss of life/vehicle
- 3 = All others

##### Functional Criticalities:

- 1R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of life or vehicle.
- 2R = Redundant hardware items (like or unlike) all of which, if failed, could cause loss of mission.

##### Redundancy Screen A:

- 1 = Is Checked Out PreFlight
- 2 = Is Capable of Check Out PreFlight
- 3 = Not Capable of Check Out PreFlight
- NA = Not Applicable

##### Redundancy Screens B and C:

- P = Passed Screen
- F = Failed Screen
- NA = Not Applicable

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/14/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 3/1R  
MDAC ID: 205 ABORT: 3/1R

ITEM: DDU-CDR  
FAILURE MODE: LOSS OF PWR OUTPUT

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU-CDR
- 3) POWER OUTPUT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ F ]

LOCATION: FLT DECK  
PART NUMBER: MC409-0023-0002, 0003

CAUSES: CONTAMINATION, SHOCK, VIBRATION, PIECE-PART STRUCTURAL  
FAILURE, TEMPERATURE

EFFECTS/RATIONALE:

LOSS OF ONE DDU ENVOKE MDF. LOSS OF ALL REDUNDANCY MAY CAUSE  
LOSS OF CREW/VEHICLE DUE TO LOSS OF MANUAL CONTROLLERS. CDR AND  
PILOT DDU COOLED BY COMMON AIDR DUCT. LOSS OF AIR DUCT MAY CAUSE  
LOSS OF BOTH DDU'S.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/14/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 3/1R  
MDAC ID: 206 ABORT: 3/1R

ITEM: DDU-CDR  
FAILURE MODE: ERRONEOUS POWER OUTPUT

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU-CDR
- 3) POWER OUTPUT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/1R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/1R		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ F ]

LOCATION: FLT DECK  
PART NUMBER: MC409-0023-0002, 0003

CAUSES: CONTAMINATION, SHOCK, VIBRATION, PIECE-PART STRUCTURAL  
FAILURE, TEMPERATURE

EFFECTS/RATIONALE:

POSSIBLE LOSS OF CREW/VEHICLE IF ALL REDUNDANCY IS LOST. CDR AND  
PLT DDU COOLED BY COMMON AIR DUCT. LOSS OF AIR DUCT MAY CAUSE  
LOSS OF BOTH DDU DUE TO OVERHEATING.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 3/1R  
MDAC ID: 207 ABORT: 3/1R

ITEM: DDU-PLT  
FAILURE MODE: LOSS OF POWER OUTPUT

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU-PLT
- 3) POWER OUTPUT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ F ]

LOCATION: FLT DECK  
PART NUMBER: MC409-0023-0002, 0003

CAUSES: CONTAMINATION, SHOCK, VIBRATION, PIECE-PART STRUCTURAL  
FAILURE, TEMPERATURE

EFFECTS/RATIONALE:

LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS  
OF ALL CONTROLLER FUNCTIONS. CDR AND PLT DDU'S ARE COOLED BY  
COMMON AIR DUCT. LOSS OF THIS AIR DUCT MAY CAUSE LOSS OF BOTH  
DDU'S DUE TO OVERHEATING.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 3/1R  
MDAC ID: 208 ABORT: 3/1R

ITEM: DDU-PLT  
FAILURE MODE: ERRONEOUS POWER OUTPUT

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU-PLT
- 3) POWER OUTPUT
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/1R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ F ]

LOCATION: FLT DECK  
PART NUMBER: MC409-0023-0002, 0003

CAUSES: CONTAMINATION, SHOCK, VIBRATION, PIECE-PART STRUCTURAL  
FAILURE, TEMPERATURE

EFFECTS/RATIONALE:

LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE TO LOSS  
OF ALL CONTROLLER FUNCTIONS. CDR AND PLT DDU'S ARE COOLED BY  
COMMON AIR DUCT. LOSS OF THIS AIR DUCT MAY CAUSE LOSS OF BOTH  
DDU'S DUE TO OVERHEATING.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C/EPD&C FLIGHT: 3/1R  
MDAC ID: 209 ABORT: 3/1R

ITEM: PWR CKT-CB  
FAILURE MODE: FAIL OPEN

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU
- 3) POWER CIRCUIT
- 4) CB
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/2R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/2R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ F ] C [ P ]

LOCATION: PNL 014, 015  
PART NUMBER: MC454-0026-2075

CAUSES: CONTAMINATION, VIBRATION, SHOCK

EFFECTS/RATIONALE:

DDU'S REDUNDANTLY POWERED. LOSS OF ICB NOT DETECTED IN FLIGHT,  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE LOSS OF  
CONTROLLER OPERATIONS.

REFERENCES:



INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C/EPD&C FLIGHT: 3/1R  
MDAC ID: 210 ABORT: 3/1R

ITEM: PWR CKT-CB  
FAILURE MODE: FAIL OPEN

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU
- 3) POWER CIRCUIT
- 4) CB
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/2R	RTLS:	3/1R
LIFTOFF:	3/1R	TAL:	3/1R
ONORBIT:	3/2R	AOA:	3/1R
DEORBIT:	3/1R	ATO:	3/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ F ] C [ P ]

LOCATION: PNL 014, 015  
PART NUMBER: MC454-0026-2075

CAUSES: CONTAMINATION, VIBRATION, SHOCK

EFFECTS/RATIONALE:

DDU'S REDUNDANTLY POWERED. LOSS OF ICB NOT DETECTED IN FLIGHT,  
LOSS OF ALL REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE DUE LOSS OF  
CONTROLLER OPERATIONS.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 2/1R  
MDAC ID: 211 ABORT: 2/1R

ITEM: PWR CKT-SW (CDR)  
FAILURE MODE: FAIL OPEN

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU
- 3) POWER CIRCUIT
- 4) SWITCH
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		HDW/FUNC
	HDW/FUNC	ABORT	
PRELAUNCH:	3/2R	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/2R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ P ]

LOCATION: F7A5, F8A8  
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, VIBRATION, SHOCK

EFFECTS/RATIONALE:

THE CONTROLLERS IN THE AFFECTED STATION IS LOST. LOSS OF ALL  
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/15/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 2/1R  
MDAC ID: 212 ABORT: 2/1R

ITEM: PWR CKT-SW (PLT)  
FAILURE MODE: FAIL OPEN

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) DDU
- 3) POWER CIRCUIT
- 4) SWITCH
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES		
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/2R	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	3/2R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ P ]

LOCATION: F7A5, F8A8  
PART NUMBER: ME452-0102-7352

CAUSES: CONTAMINATION, VIBRATION, SHOCK

EFFECTS/RATIONALE:  
THE CONTROLLERS IN THE AFFECTED STATION IS LOST. LOSS OF ALL  
REDUNDANCY MAY CAUSE LOSS OF CREW/VEHICLE.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/19/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C FLIGHT: 2/1R  
MDAC ID: 1439 ABORT: 2/1R

ITEM: CEU-PWR SUPPLY  
FAILURE MODE: LOSS OF PWR SUPPLY

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) CAUTION & WARNING
- 3) CEU
- 4) POWER SUPPLY
- 5)
- 6)
- 7)
- 8)
- 9)

CRITICALITIES			
FLIGHT PHASE	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	2/1R	RTLS:	2/1R
LIFTOFF:	2/1R	TAL:	2/1R
ONORBIT:	2/1R	AOA:	2/1R
DEORBIT:	2/1R	ATO:	2/1R
LANDING/SAFING:	2/1R		

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ P ]

LOCATION: 83V73A4 (BAY 3A)  
PART NUMBER: MC409-0012-0031

CAUSES: CONTAMINATION, SHOCK, VIBRATION, PIECE-PART FAILURE

EFFECTS/RATIONALE:

LOSS OF FIRST POWER SUPPLY, NO EFFECT. LOSS OF SECOND POWER  
SUPPLY NO ALERT GIVEN. FAILURE WILL INTERRUPT FUEL CELL COOLING  
OPERATION MAY CAUSE ON EXPLOSION DUE TO OVERHEATING.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 7/09/87  
SUBSYSTEM: D&C/EPD&C  
MDAC ID: 1604

HIGHEST CRITICALITY HDW/FUNC  
FLIGHT: 3/3  
ABORT: 3/3

ITEM: ACA PWR CKT-EVENT  
FAILURE MODE: FAILED OPEN

LEAD ANALYST: W.H. TRAHAN

SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) ACA
- 3) PWR CKT
- 4) EVENTS
- 5)
- 6)
- 7)
- 8)
- 9)

	CRITICALITIES	
FLIGHT PHASE	HDW/FUNC	ABORT
PRELAUNCH:	3/3	RTLS: 3/3
LIFTOFF:	3/3	TAL: 3/3
ONORBIT:	3/3	AOA: 3/3
DEORBIT:	3/3	ATO: 3/3
LANDING/SAFING:	3/3	

REDUNDANCY SCREENS: A [ 2 ] B [ P ] C [ ]

LOCATION: PNL 014, 015, 016, 06, A6A1  
PART NUMBER: MC434-0075-0012

CAUSES: CONTAMINATION, SHOCK, VIBRATION

EFFECTS/RATIONALE:

LAMPS WILL NOT BE ILLUMINATE. OTHER DISPLAYS, CRT, AND AUDIBLE  
ALARM CAN PROVIDE INFORMATION. CKT CONSIST OF CB, BUS SELECT,  
SW, RESISTORS, AND TEST SW.

REFERENCES:

INDEPENDENT ORBITER ASSESSMENT  
ORBITER SUBSYSTEM ANALYSIS WORKSHEET

DATE: 1/13/88 HIGHEST CRITICALITY HDW/FUNC  
SUBSYSTEM: D&C/EPD&C FLIGHT: 3/3  
MDAC ID: 1605 ABORT: 3/3

ITEM: ACA  
FAILURE MODE: ERRONEOUS OUTPUT

LEAD ANALYST: W.H. TRAHAN SUBSYS LEAD: W.H. TRAHAN

BREAKDOWN HIERARCHY:

- 1) D&C
- 2) ACA
- 3)
- 4)
- 5)
- 6)
- 7)
- 8)
- 9)

FLIGHT PHASE	CRITICALITIES		
	HDW/FUNC	ABORT	HDW/FUNC
PRELAUNCH:	3/3	RTLS:	3/3
LIFTOFF:	3/3	TAL:	3/3
ONORBIT:	3/3	AOA:	3/3
DEORBIT:	3/3	ATO:	3/3
LANDING/SAFING:	3/3		

REDUNDANCY SCREENS: A [NA ] B [NA ] C [NA ]

LOCATION: PNL 014, 015, 016, 06, A6A1  
PART NUMBER: MC434-0283-0003

CAUSES: CONTAMINATION, SHOCK VIBRATION

EFFECTS/RATIONALE:

FALSE INDICATION. COULD RESULT IN THE CREW DOWNMODING WHEN NOT NECESSARY.

REFERENCES:

## APPENDIX F

### NASA FMEA TO IOA WORKSHEET CROSS REFERENCE/RECOMMENDATIONS

This section provides a cross reference between the NASA FMEA and corresponding IOA analysis worksheet(s) included in Appendix E. The Appendix F identifies: NASA FMEA Number, IOA Assessment Number, NASA criticality and redundancy screen data, and IOA recommendations.

#### Appendix F Legend

##### Code Definition

None.

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APPENDIX F

NASA FMEA TO IOA WORKSHEET CROSS REFERENCE / RECOMMENDATIONS

IDENTIFIERS		NASA			IOA RECOMMENDATIONS *						
NASA FMEA NUMBER	IOA ASSESSMENT NUMBER	CRIT HW/F	SCREENS A B C			CRIT HW/F	SCREENS A B C			OTHER (SEE LEGEND CODE)	ISSUE
	D&C-1101	11	/			11	/				
	D&C-1203	11	/			11	/				
	D&C-1204	11	/			11	/				
	D&C-1205	11	/			11	/				
	D&C-1206	11	/			11	/				
	D&C-1304	11	/			11	/				
	D&C-1404	11	/			11	/				
	D&C-1438	11	/			11	/				
	D&C-1704	11	/			11	/				
	D&C-1705	11	/			11	/				
	D&C-1706	11	/			11	/				
	D&C-204	11	/			11	/				
	D&C-504	11	/			11	/				
	D&C-606	11	/			11	/				
	D&C-608	11	/			11	/				
05-3-12101-1	D&C-701	11	3/3	NA	NA	NA	11	/			
05-3-12101-2	D&C-702	11	3/3	NA	NA	NA	11	/			
05-3-12102-1	D&C-701	11	3/3	NA	NA	NA	11	/			
05-3-12102-2	D&C-302	11	3/3	NA	NA	NA	11	/			
05-3-12103-1	D&C-1702	11	3/3	NA	NA	NA	11	/			
05-3-12103-2	D&C-1703	11	3/3	NA	NA	NA	11	/			
05-3-12103-3	D&C-1703A	11	3/3	NA	NA	NA	11	/			
05-3-12110-1	D&C-401	11	3/1R	P	P	P	11	/			
05-3-12110-3	D&C-407	11	3/1R	P	P	P	11	/			
05-3-12110-4	D&C-403	11	3/1R	P	P	P	11	/			
05-3-12110-5	D&C-405	11	3/1R	P	P	P	11	/			
05-3-12111-1	D&C-409A	11	3/3	NA	NA	NA	11	/			
05-3-12111-2	D&C-410	11	3/3	NA	NA	NA	11	/			
05-3-12111-3	D&C-409B	11	3/3	NA	NA	NA	11	/			
05-3-12115-1	D&C-601	11	3/1R	P	P	P	11	/			
05-3-12115-2	D&C-601A	11	3/1R	P	P	P	11	/			
05-3-12115-3	D&C-603	11	3/1R	P	P	P	11	/			
05-3-12115-4	D&C-607	11	3/1R	P	P	P	11	/			
05-3-12115-5	D&C-605	11	3/1R	P	P	P	11	/			
05-3-12116-1	D&C-609A	11	3/3	NA	NA	NA	11	/			
	D&C-609B	11	3/3	NA	NA	NA	11	/			
05-3-12116-2	D&C-610	11	3/3	NA	NA	NA	11	/			
05-3-12120-1	D&C-501	11	3/1R	P	P	P	11	/			
	D&C-503	11	3/1R	P	P	P	11	/			
	D&C-505	11	3/1R	P	P	P	11	/			
	D&C-507	11	3/1R	P	P	P	11	3/3	NA	NA	NA
05-3-12120-2	D&C-502	11	3/1R	P	P	P	11	/			
	D&C-504	11	3/1R	P	P	P	11	/			
	D&C-506	11	3/1R	P	P	P	11	/			
	D&C-508	11	3/1R	P	P	P	11	3/3	NA	NA	NA
		11									

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IDENTIFIERS		NAEA			IDA PERSONNEL ACTIONS			OTHER		ISSUE
NAEA	IDA	NAVF	A	B	C	NAVF	A	B	C	SEE LEGEND CODE
NAEA NUMBER	ASSESSMENT NUMBER									
5-3-12101-1	D&C-510	3/3	NA	NA	NA	/				
5-3-12101-2	D&C-509	3/3	NA	NA	NA	/				
5-3-12101-3	D&C-510A	3/3	NA	NA	NA	/				
5-3-12102-1	D&C-512	3/3	NA	NA	NA	/				
5-3-12102-2	D&C-511	3/3	NA	NA	NA	/				
5-3-12102-3	D&C-512A	3/3	NA	NA	NA	/				
5-3-12103-1	D&C-514	3/3	NA	NA	NA	/				
5-3-12103-2	D&C-513A	3/3	NA	NA	NA	/				
5-3-12103-3	D&C-514A	3/3	NA	NA	NA	/				
5-3-12105-1	D&C-1201	2/1R	P	P	P	/				
5-3-12105-2	D&C-1202	2/1R	P	P	P	3/1R	P	P	P	
5-3-12106-1	D&C-1203	3/3	NA	NA	NA	/				
5-3-12106-2	D&C-1207	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12106-3	D&C-1208A	3/3	NA	NA	NA	/				
5-3-12107-1	D&C-1209	3/3	NA	NA	NA	/				
5-3-12107-2	D&C-1210	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12107-3	D&C-1209A	3/3	NA	NA	NA	/				
5-3-12108-1	D&C-1212	3/3	NA	NA	NA	/				
5-3-12108-2	D&C-1211	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12108-3	D&C-1212A	3/3	NA	NA	NA	/				
5-3-12130-1	D&C-201	2/1R	P	P	P	/				
5-3-12130-2	D&C-202	2/1R	P	P	P	3/1R	P	P	P	
5-3-12130-3	D&C-201A	3/1R	P	P	P	/				
5-3-12130-4	D&C-201B	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12130-5	D&C-200A	3/2	NA	NA	NA	3/1R	P	P	P	
5-3-12130-6	D&C-201C	3/1R	P	P	P	/				
5-3-12130-7	D&C-202B	3/1R	P	P	P	/				
5-3-12130-8	D&C-202C	3/1R	P	P	P	/				
5-3-12131-1	D&C-203A	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12135-1	D&C-1102	3/3	NA	NA	NA	/				
5-3-12135-2	D&C-1101	3/3	NA	NA	NA	/				
5-3-12136-1	D&C-1106	3/3	NA	NA	NA	/				
5-3-12137-1	D&C-1103	3/3	NA	NA	NA	/				
5-3-12137-2	D&C-1103A	3/3	NA	NA	NA	/				
5-3-12138-1	D&C-1107	3/3	NA	NA	NA	/				
5-3-12139-1	D&C-1108	3/3	NA	NA	NA	/				
5-3-12140-1	D&C-1302	3/3	NA	NA	NA	/				
5-3-12140-2	D&C-1301	3/3	NA	NA	NA	/				
5-3-12141-1	D&C-1303	3/3	NA	NA	NA	/				
	D&C-1303A	3/3	NA	NA	NA	/				
5-3-12141-2	D&C-1306	3/3	NA	NA	NA	/				
5-3-12150-1	D&C-2301	3/2R	NA	NA	NA	/				
5-3-12150-2	D&C-2302	3/3	NA	NA	NA	/				
5-3-12153-1	D&C-1207A	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12154-1	D&C-1210A	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12155-1	D&C-1201A	3/3	NA	NA	NA	3/1R	P	P	P	
5-3-12156-1	D&C-409C	3/3	NA	NA	NA	/				
5-3-12158-1	D&C-511A	3/3	NA	NA	NA	/				
5-3-12159-1	D&C-511B	3/3	NA	NA	NA	/				
5-3-12160-1	D&C-511C	3/3	NA	NA	NA	/				

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IDENTIFIERS		DATA				DATA RECOMMENDATIONS *					
NADA	ICA	CRIT	SCREENS			CRIT	SCREENS			OTHER	ISSUE
FWDA NUMBER	ASSESSMENT NUMBER	HWY	A	B	C	HWY	A	B	C	(SEE LEGEND CODE)	
05-3-12070-1	D&C-1001	3/3	NA	NA	NA	/	/	/	/		
05-3-12070A-1	D&C-1002	3/1R	P	P	P	/	/	/	/		
05-3-12070A-2	D&C-1003	3/1R	P	P	P	/	/	/	/		
05-3-12070B-1	D&C-1071	3/1R	P	P	P	/	/	/	/		
05-3-12070B-2	D&C-1004	3/1R	P	P	P	/	/	/	/		
05-3-12070C-1	D&C-1600D	3/2R	P	P	P	/	/	/	/		
05-3-12070C-1	D&C-1432	3/2R	P	P	P	/	/	/	/		
05-3-12070C-2	D&C-1432A	3/2R	P	P	P	/	/	/	/		
	D&C-1434	3/2R	P	P	P	/	/	/	/		
05-3-12070C-3	D&C-1435	3/2R	P	P	P	/	/	/	/		
05-3-12070C-4	D&C-1437A	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-5	D&C-1437B	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12070C-6	D&C-1435	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-7	D&C-1437	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-8	D&C-1434	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-9	D&C-1401	3/2R	P	P	P	/	/	/	/		
05-3-12070C-2	D&C-1401A	3/2R	P	P	P	/	/	/	/		
05-3-12070C-7	D&C-1401B	3/2R	P	P	P	/	/	/	/		
05-3-12070C-6	D&C-1401C	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12070C-5	D&C-1401D	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12070C-7	D&C-1401E	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-6	D&C-1401F	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-6	D&C-1401G	3/3	NA	NA	NA	/	/	/	/		
05-3-12070C-9	D&C-1437X	3/1R	P	P	P	/	/	/	/		
05-3-120710-1	D&C-1403	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-120711-1	D&C-1409	3/3	NA	NA	NA	/	/	/	/		
05-3-120711-2	D&C-1410	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-120711-3	D&C-1409A	3/2R	P	P	P	3/3	NA	NA	NA		
	D&C-1410A	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12312-1	D&C-1406	3/3	NA	NA	NA	/	/	/	/		
	D&C-1407	3/3	NA	NA	NA	/	/	/	/		
	D&C-1408	3/3	NA	NA	NA	/	/	/	/		
	D&C-1415	3/3	NA	NA	NA	/	/	/	/		
	D&C-1416	3/3	NA	NA	NA	/	/	/	/		
	D&C-1417	3/3	NA	NA	NA	/	/	/	/		
05-3-12313-1	D&C-1405	3/3	NA	NA	NA	/	/	/	/		
05-3-12314-1	D&C-1422	3/3	NA	NA	NA	/	/	/	/		
05-3-12314-1	D&C-1421	3/3	NA	NA	NA	/	/	/	/		
05-3-12314-2	D&C-1421A	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12317-1	D&C-1426	3/3	NA	NA	NA	/	/	/	/		
	D&C-1427	3/3	NA	NA	NA	/	/	/	/		
05-3-12318-1	D&C-1428	3/3	NA	NA	NA	/	/	/	/		
	D&C-1429	3/3	NA	NA	NA	/	/	/	/		
05-3-12319-1	D&C-1418	3/3	NA	NA	NA	/	/	/	/		
	D&C-1419	3/3	NA	NA	NA	/	/	/	/		
05-3-12320-1	D&C-1602E	3/1R	P	P	P	/	/	/	/		
05-3-12321-2	D&C-1602F	3/2R	P	P	P	3/1R	P	P	P		
05-3-12321-3	D&C-1603B	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12321-4	D&C-1603C	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12321-5	D&C-1603D	3/2R	P	P	P	3/3	NA	NA	NA		

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IDENTIFIERS		NAGA			IOA RECOMMENDATIONS						
NAGA	IOA	CRIT	SCREENS		CRIT	SCREENS	OTHER		1986E		
WREN NUMBER	ASSESSMENT NUMBER	HA/F	A B C		HA/F	A B C	(SEE LEGEND 1005)				
1-3-12331-6	D&D-1603E	3/3	P P P		3/3	NA NA NA					
1-3-12331-7	D&D-1603B	3/3	NA NA NA		3/3	P P P					
1-3-12332-1	D&D-1411	3/3	NA NA NA		/						
	D&D-1412	3/3	NA NA NA		/						
		3/3	NA NA NA		/						
	D&D-1413	3/3	NA NA NA		/						
1-3-12333-1	D&D-1430	3/3	NA NA NA		/						
	D&D-1431	3/3	NA NA NA		/						
1-3-12335-1	D&D-1604	3/3	NA NA NA		/						
1-3-12340-1	D&D-1604A	3/3	NA NA NA		/						
1-3-12345-1	D&D-1602F	3/1R	P P P		/						
1-3-12350-1	D&D-1604B	3/3	NA NA NA		/						
1-3-12356-1	D&D-2001A	3/3	NA NA NA		/						
1-3-12357-1	D&D-2001B	3/3	NA NA NA		/						
1-3-12358-1	D&D-2001E	3/3	NA NA NA		/						
1-3-12360-1	D&D-1602I	3/2R	P P P		3/1R	P P P					
1-3-12360-2	D&D-1602Y	3/2R	P P P		3/1R	P P P					
1-3-12361-1	D&D-2001D	3/3	NA NA NA		/						
1-3-12362-1	D&D-1604C	3/3	NA NA NA		/						
1-3-12363-1	D&D-1603	3/3	NA NA NA		/						
1-3-12364-1	D&D-1604D	3/3	NA NA NA		/						
1-3-12365-1	D&D-1602J	3/1R	P P P		/						
1-3-12366-1	D&D-1604E	3/3	NA NA NA		/						
1-3-12367-1	D&D-1601	3/1R	P P P		/						
1-3-12368-1	D&D-1601A	3/1R	P P P		/						
1-3-12369-1	D&D-1604F	3/3	NA NA NA		/						
1-3-12370-1	D&D-1604G	3/3	NA NA NA		/						
1-3-12371-1	D&D-1604H	3/3	NA NA NA		/						
1-3-12372-1	D&D-1601F	3/1R	P P P		/						
1-3-12373-1	D&D-1604I	3/3	NA NA NA		/						
1-3-12374-1	D&D-1604J	3/3	NA NA NA		/						
1-3-12375-1	D&D-1601B	3/1R	NA NA NA		3/1R	P P P					
1-3-12376-1	D&D-1604K	3/3	NA NA NA		/						
1-3-12376-T8D	D&D-1605X	3/3	NA NA NA		/						
1-3-12377-1	D&D-1604L	3/3	NA NA NA		/						
1-3-12378-1	D&D-1604M	3/3	NA NA NA		/						
1-3-12379-1	D&D-1601B	3/1R	P P P		/						
1-3-12380-1	D&D-1604N	3/3	NA NA NA		/						
1-3-12381-1	D&D-1604O	3/3	NA NA NA		/						
1-3-12382-1	D&D-1604P	3/3	NA NA NA		/						
1-3-12383-1	D&D-1604D	3/3	NA NA NA		/						
1-3-12384-1	D&D-1601C	3/1R	P P P		/						
1-3-12385-1	D&D-1601D	3/1R	P P P		/						
1-3-12385-2	D&D-1604R	3/3	NA NA NA		/						
1-3-12386-1	D&D-1601E	3/1R	P P P		/						
1-3-12387-1	D&D-1604S	3/3	NA NA NA		/						
1-3-12388-1	D&D-1604T	3/3	NA NA NA		/						
1-3-12389-1	D&D-1604U	3/3	NA NA NA		/						
1-3-12390-1	D&D-1602L	3/1R	P P P		/						
1-3-12390-2	D&D-1602M	3/1R	P P P		/						

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IDENTIFIERS		NABA			IDA RECOMMENDATIONS						
NABA	IDA	CRIT	SCREENS			CRIT	SCREENS			OTHER	ISSUE
WPA NUMBER	ASSESSMENT NUMBER	HW/F	A	B	C	HW/F	A	B	C	ISSUE LEGEND CODE	
05-3-12361-1	D&C-1604V	3/3	NA	NA	NA	/					
05-3-12362-1	D&C-1604W	3/3	NA	NA	NA	/					
05-3-12363-1	D&C-1604X	3/3	NA	NA	NA	/					
05-3-12364-1	D&C-1604Y	3/3	NA	NA	NA	/					
05-3-12402-1	D&C-1801A	3/3	NA	NA	NA	/					
05-3-12404-1	D&C-1802	3/3	NA	NA	NA	/					
05-3-12404-2	D&C-1802A	3/3	NA	NA	NA	/					
05-3-12407-1	D&C-1801B	3/3	NA	NA	NA	/					
05-3-12410-1	D&C-1801C	3/3	NA	NA	NA	/					
05-3-12411-1	D&C-1802B	3/3	NA	NA	NA	/					
05-3-12411-2	D&C-1802C	3/3	NA	NA	NA	/					
05-3-12413-1	D&C-1801D	3/3	NA	NA	NA	/					
05-3-12413-1	D&C-1801E	3/3	NA	NA	NA	/					
05-3-12415-1	D&C-1801F	3/3	NA	NA	NA	/					
05-3-12416-1	D&C-1801G	3/3	NA	NA	NA	/					
05-3-12501-1	D&C-1803A	3/3	NA	NA	NA	/					
05-3-12507-1	D&C-1803B	3/3	NA	NA	NA	/					
05-3-12508-1	D&C-1801H	3/3	NA	NA	NA	/					
05-3-12601-1	D&C-102	2/1R	P	P	P	/					
05-3-12601-2	D&C-101	2/1R	P	P	P	/					
05-3-12602-1	D&C-104	2/1R	P	P	P	/					
05-3-12602-2	D&C-103	2/1R	P	P	P	/					
05-3-12603-1	D&C-105	3/3	NA	NA	NA	/					
05-3-12701-1	D&C-1801I	3/2R	P	P	P	3/3	NA	NA	NA		
05-3-12705-1	D&C-1804	3/2R	P	P	P	/					
05-3-12709-1	D&C-1804A	3/2R	P	P	P	/					
05-3-12804-1	D&C-1804B	3/3	NA	NA	NA	3/2R	P	P	P		
05-3-12804-5	D&C-1804C	3/3	NA	NA	NA	3/2R	P	P	P		
05-3-12805-1	D&C-1804D	3/3	NA	NA	NA	3/2R	P	P	P		
05-60-2002-1	D&C-2201	3/1R	NA	NA	NA	3/3	NA	NA	NA		
05-60-2003-1	D&C-703	3/3	NA	NA	NA	/					
05-60-2004-1	D&C-409	3/1R	P	P	P	/					
05-60-2005-1	D&C-409	3/1R	P	P	P	3/3	NA	NA	NA		
05-60-2006-1	D&C-513	3/1R	P	P	P	/					
05-60-2007-1	D&C-2202	3/1R	P	P	P	3/3	NA	NA	NA		
05-60-2008-1	D&C-2203	3/3	NA	NA	NA	/					
05-60-2101-1	D&C-1901	3/1R	P	P	P	/					
05-60-2102-1	D&C-1701	3/3	NA	NA	NA	/					
05-60-2103-1	D&C-203	3/1R	P	P	P	3/1R	P	P	P		
05-60-2103A-1	D&C-209X	3/1R	P	P	P	/					
05-60-2103B-1	D&C-210X	3/1R	P	P	P	/					
05-60-2104-1	D&C-1810	3/3	NA	NA	NA	/					
05-60-2105-1	D&C-1810A	3/3	NA	NA	NA	/					
05-60-2106-1	D&C-1810B	3/3	NA	NA	NA	/					
05-60-2107-1	D&C-1810C	3/3	NA	NA	NA	/					
05-60-2108-1	D&C-1305	3/3	NA	NA	NA	/					
05-60-2109-1	D&C-1105	3/3	NA	NA	NA	/					
05-60-2110-1	D&C-1810D	3/3	NA	NA	NA	/					
05-60-2111-1	D&C-1602	3/1R	P	P	P	/					
05-60-2112-1	D&C-1435	2/1R	P	P	P	3/3	NA	NA	NA		

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IDENTIFIERS		NADA			10A RECOMMENDATIONS						
NADA NADA NUMBER	10A ASSESSMENT NUMBER	CRIT	SCREENS			CRIT	SCREENS			OTHER (SEE LEGEND CODE)	ISSUE
			W/F	A	B	C	W/F	A	B	C	
5-60-2202-1	D&C-1901A	3/1R	P	P	P	/					
5-60-2202-2	D&C-1901B	3/1R	P	P	P	/					
5-60-2203-1	D&C-2402A	2/2	P	P	P	3/1R	P	P	P		
5-60-2203-2	D&C-2401A	3/3	NA	NA	NA	/					
5-60-2203-3	D&C-2401	3/1R	P	P	P	/					
5-60-2203-4	D&C-2402	2/2	P	P	P	3/1R	P	P	P		
5-60-2203A-1	D&C-211X	2/1R	P	P	P	/					
5-60-2203B-1	D&C-212X	2/1R	P	P	P	/					
5-60-2204-1	D&C-1810E	3/3	NA	NA	NA	/					
5-60-2204-2	D&C-1810F	3/3	NA	NA	NA	/					
5-60-2204-3	D&C-1811	3/3	NA	NA	NA	/					
5-60-2205-1	D&C-1810H	3/3	NA	NA	NA	/					
5-60-2205-2	D&C-1810I	3/3	NA	NA	NA	/					
5-60-2206-1	D&C-1811A	3/3	NA	NA	NA	/					
5-60-2206-2	D&C-1810K	3/3	NA	NA	NA	/					
5-60-2207-1	D&C-1810L	3/3	NA	NA	NA	/					
5-60-2207-2	D&C-1810M	3/3	NA	NA	NA	/					
5-60-2207-3	D&C-1811B	3/3	NA	NA	NA	/					
5-60-2208-1	D&C-1810N	3/3	NA	NA	NA	/					
5-60-2208-2	D&C-1810O	3/3	NA	NA	NA	/					
5-60-2208-3	D&C-1811C	3/3	NA	NA	NA	/					
5-60-2209-1	D&C-1810P	3/3	NA	NA	NA	/					
5-60-2209-2	D&C-1810Q	3/3	NA	NA	NA	/					
5-60-2209-3	D&C-1811D	3/3	NA	NA	NA	/					
5-60-2210-1	D&C-1810R	3/3	NA	NA	NA	/					
5-60-2210-2	D&C-1810S	3/3	NA	NA	NA	/					
5-60-2210-3	D&C-1811E	3/3	NA	NA	NA	/					
5-60-2211-1	D&C-1810T	3/3	NA	NA	NA	/					
5-60-2211-2	D&C-1810U	3/3	NA	NA	NA	/					
5-60-2211-3	D&C-1811F	3/3	NA	NA	NA	/					
5-60-2212-1	D&C-1810V	3/3	NA	NA	NA	/					
5-60-2212-2	D&C-1810W	3/3	NA	NA	NA	/					
5-60-2212-3	D&C-1811G	3/3	NA	NA	NA	/					
5-60-2213-1	D&C-1901C	3/1R	P	P	P	/					
5-60-2213-2	D&C-1901D	3/1R	P	P	P	/					
5-60-2213-3	D&C-1902	3/1R	P	P	P	/					
5-60-2214-1	D&C-107	2/1R	P	P	P	/					
5-60-2214-2	D&C-107A	2/1R	P	P	P	/					
5-60-2214-3	D&C-108	2/1R	P	P	P	3/3	NA	NA	NA		
5-60-2215-1	D&C-1810Y	3/3	NA	NA	NA	/					
5-60-2215-2	D&C-1810Z	3/3	NA	NA	NA	/					
5-60-2215-3	D&C-1811H	3/3	NA	NA	NA	/					
5-60-2303-1	D&C-1810AA	3/2R	NA	NA	NA	3/3	NA	NA	NA		
	D&C-1811I	3/3	NA	NA	NA	/					
5-60-2304-1	D&C-1810BB	3/2R	NA	NA	NA	3/3	NA	NA	NA		
5-60-2304-2	D&C-1811J	3/3	NA	NA	NA	/					
5-60-2305-1	D&C-1810CC	3/3	NA	NA	NA	/					
5-60-2305-2	D&C-1811K	3/3	NA	NA	NA	/					
5-60-2306-1	D&C-1810DD	3/3	NA	NA	NA	/					
5-60-2306-2	D&C-1811L	3/3	NA	NA	NA	/					

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IDENTIFIERS		NASA		IDA RECOMMENDATIONS *							
NASA	IDA	CRIT	SCREENS			CRIT	SCREENS			OTHER	ISSUE
ORIG NUMBER	ASSESSMENT NUMBER	HW/F	A	B	C	HW/F	A	B	C	(SEE LEGEND CODE)	
05-60-0107-1	D&C-110	11	3/15	P	P	P	11	/			
05-60-0107-2	D&C-109	11	3/15	P	P	P	11	3/3	NA	NA	NA
05-60-0107-3	D&C-1801	11	3/3	NA	NA	NA	11	/			
05-60-0801-1	D&C-1810EE	11	3/3	NA	NA	NA	11	/			
05-60-1802-1	D&C-1810FF	11	3/3	NA	NA	NA	11	/			
05-60-0803-1	D&C-1810GG	11	3/3	NA	NA	NA	11	/			
05-60-0804-1	D&C-1810HH	11	3/3	NA	NA	NA	11	/			
05-60-0805-1	D&C-106	11	2/18	P	P	P	11	/			
05-60-2806-1	D&C-1810II	11	3/3	NA	NA	NA	11	/			
05-60-2801-1	D&C-1600A	11	3/28	P	P	P	11	3/18	P	P	P
05-60-2801-2	D&C-1607	11	3/28	P	P	P	11	3/3	NA	NA	NA
05-60-2801-3	D&C-1602B	11	3/28	P	P	P	11	3/18	P	P	P
05-60-2802-1	D&C-1602C	11	3/3	NA	NA	NA	11	3/18	P	P	P
05-60-2802-2	D&C-1603A	11	3/3	NA	NA	NA	11	/			
05-60-2803-1	D&C-1810JJ	11	3/3	NA	NA	NA	11	/			
05-60-2803-2	D&C-1811M	11	3/3	NA	NA	NA	11	/			
05-60-1402	D&C-1402	11	/				11	/			
05-60-1403	D&C-1403	11	/				11	/			
05-60-1404	D&C-1404	11	/				11	/			
05-60-1405	D&C-1405	11	/				11	/			
05-60-1406	D&C-1406	11	/				11	/			
05-60-1407	D&C-1407	11	/				11	/			
05-60-1408	D&C-1408	11	/				11	/			
05-60-1409	D&C-1409	11	/				11	/			
05-60-1410	D&C-1410	11	/				11	/			









**MCDONNELL DOUGLAS ASTRONAUTICS COMPANY –  
ENGINEERING SERVICES  
16055 SPACE CENTER BLVD, HOUSTON, TEXAS 77062**